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AND

COAL

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RUSSIA has "struck oil," as described on another page, on a scale unequaled even among our great "spouters;" 2¾ million gallons a day, or about 1900 gallons a minute, is the amount stated by a correspondent of a London paper as the yield of the great Baku well. According to this estimate, even if the diameter of the well had been 5 inches, the velocity of the stream would have been about 2000 feet a minute, or, with a well of 3 inches diameter, the velocity of the stream would have been more than 5200 feet, or one mile a minute. Those who have leisure and inclination may calculate the pressure necessary to drive a column of oil and water through a tube of say 700 feet in length, at the velocity of 2000 or 5000 feet a minute.

If Australia is beating us on silver-lead bonanzas, and Russia on oil-wells, it is time we sent some more prospectors into the field, or our reputation for having "the biggest things" on, in, or under the earth will suffer.

ON another page, will be found a paper on the chlorination of gold ores. When this paper was read at the meeting of the Institute of Mining Engineers, some points of interest were brought out in the discussion.

The use of hydrogen sulphide, instead of ferrous sulphate, for the precipitation of gold from certain chloride solutions, presents great advantages. As we have practiced it, the H_2S was made from paraffine and sulphur, preferably from "single-pressed" paraffine and crude brimstone. The manufacture is extremely simple and inexpensive. The gas is forced through the solution by an air-pump. The excess of chlorine can be in part carried off by pumping air through the solution, after which a smaller quantity of H_2S is required for the precipitation.

The loss of gold by imperfect settling in the tanks, however long the solution stands, is much greater than is generally supposed ; and this loss may be completely obviated and the time greatly shortened, and consequently the number of precipitation-tanks greatly reduced, by the use of the simple filter illustrated and described in the ENGINEERING AND MINING JOURNAL, November 28th, 1885.

THE questions of the manufacture and cost of coke are certainly among the most important before the profession to-day, and it is very satisfactory to see the discussion taken up by such eminent authorities as Mr. KOERNER, Mr. FULTON, and Mr. HOWE.

Mr. FULTON will add greatly to the interest of the discussion if he will give from his own extensive experience the *actual weight* of coal used, and coke produced, say at Johnstown, for example, through a year or more, and the average composition of coal and coke. We can not resist the impression that he has found, as have others, that the conventional figure of 1·6 tons of coal to produce 1 ton of coke is very far from representing actual practice.

The proportions of an oven should be adapted to the kind of coal to be coked, just as the proportions of a blast-furnace are to the ore and fuel to be used in it. Mr. FULTON would not think of adopting the lines of a coke or anthracite furnace, if he were going to use charcoal for fuel. The coke-oven adapted to dry coals is very probably ill-proportioned for coking gassy coals with the greatest advantage ; yet our old bee-hive oven is supposed to be suited to all coals, while in reality, though it makes good coke with some coals, it is, beyond question, extremely wasteful in all cases.

We do not propose to enter the discussion at this point, but merely to again call attention to the very great importance of the subject, and to invite its discussion by such of our readers as have knowledge of any branch of it.

IS HARD STEEL SUITABLE FOR HEAVY GUNS?

The question of hard or soft steel in cannon has for some time attracted the attention of engineers, especially since the recent bursting of some of the English naval guns, although the experience of Germany and France in the Franco-German war had already demonstrated a very large proportion of failures among guns made of this metal.

Since the very introduction of steel for structural purposes, engineer have found it necessary to use only low carbon or mild steel ; for it was early found that hard steel was brittle and incapable of resisting shocks. Take, for example, such uses as for ship-building, for bridges, for locomotive tires, for roll shells in crushing ore, for jaw-plates in rock-breakers, and generally for uses where sudden and heavy blows or vibrations are to be expected.

It is true we yet know very little concerning the reasons why hard steel, capable of resisting extremely high tensile strains, should break under comparatively light shocks ; but the fact is perfectly recognized nevertheless, and in all works where the contractor is held by business interest or direct specification to secure a durable structure of steel, he would not think of adopting the hard metal. It seems incomprehensible, therefore, that in guns, where the jar and vibration are probably greater than in any other engineering use, government engineers should have adopted a metal that has long been condemned and rejected by civil engineers in all uses where the conditions are analogous.

That the resistance to abrasion that hard steel presents is a desirable quality is admitted, and it may be that some means will yet be found by which the brittleness or liability to fracture under shock of hard steel may be overcome, and investigations having this object in view should be undertaken and pursued by both the government and private constructors.

Our government should have this question thoroughly examined before repeating on an expensive scale the disastrous experience of Great Britain. Specifications for some small and inexpensive guns might be prepared that would leave the constructor full liberty to use any metal he desired, the guns to resist under the very heaviest work that in actual practice they could be subjected to ; and a large premium as well as a large order might be offered to the best and cheapest guns that would fulfill the conditions.

It is quite possible that some other alloy of iron may be found to combine the good qualities of hard steel, without its drawbacks ; or it may be that the remarkable alloys of aluminium and copper that have been made by the Cowles Electric Smelting Company, and which are said to

have developed the wonderful tensile strength of 131,000 pounds to the square inch, may be found less expensive—being simple castings—than hard, or even soft, steel manufactured into a gun according to the present method.

The properties of alloys is an extremely important field for investigation, and we believe that results of the utmost value will attend a thorough exploration of it—results that may altogether change the prevailing practice in the construction of heavy ordnance.

CORRESPONDENCE.

[We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
All letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents.]

Gravimetric Assay of Zinc in Complex Ores.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: I send you a synopsis of my new (?) gravimetric assay of zinc in complex ores (of gold, silver, lead, etc.):

The powdered ore is digested in a mixture of nitric, hydrochloric, and sulphuric acid, the first two finally expelled. Copper is removed by sodium thiosulphate; iron, after peroxidation, and alumina by ammonia (double precipitation); chromium (from lead chromate, etc.) by boiling the ammoniacal solution; manganese, magnesia, lime, from the ammoniacal solution by sodium phosphate. Arsenic may or may not remain partly in solution. Finally, the filtered solution is made *faintly* acid, and the zinc is precipitated as zinc ammonium phosphate, which may be weighed as such or converted into pyrophosphate, as preferred. Results, from 98 to 99 per cent of the known quantity of zinc present.

Nov. 9, 1886. C. H. AARON.

The Manufacture and Cost of Coke.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: In one respect, I think that Mr. Fulton's interesting letter in your issue for November 6th, page 330, on Bee-Hive *vs.* Retort Coking, may give erroneous impressions.

He refers to Bell's rigid tests, which showed that the greater weight of coke obtained by the retort oven from a ton of coal did no more work in the blast-furnace than the smaller weight obtained from a ton of coal in the bee-hive.

Those unfamiliar with the matter might readily infer from this, though of course Mr. Fulton did not intend that they should, that Bell's evidence was in accord with that of other observers, and that the weight of evidence supported the position that for blast-furnace purposes the advantage of the retort, in its greater yield of coke from a ton of coal, was completely offset by the lower efficiency of its coke. This, however, is far from being the case. In the discussion of the very paper that Mr. Fulton cites in support of his view (Journal of the Iron and Steel Institute, 1885, i., page 72), Sir Bernhard Samuelson gives the results of experiments as rigid and whose results appear to me as weighty as those of Bell. In these, he found that, in experiments lasting about a month, in which 1800 tons of retort coke were used, a ton of iron was produced under like conditions with a slightly smaller weight of retort than of bee-hive coke, namely, 19·14 cwt. of the former against 19·29 cwt. of the latter. In another trial, in which 1400 tons of retort coke were used, 20·57 cwt of bee-hive coke were needed to produce a ton of iron, against 20·55 cwt. of retort coke. The grade of iron was nearly identical with both cokes, but the daily output was slightly higher with the bee-hive coke. Beyond this, while I have not the figures before me, I believe that the efficiency of retort coke in continental Europe compares favorably with that of the best British and American bee-hive coke, and both in continental experience and in Samuelson's tests, the retort coke is tried against the bee-hive under conditions that give the bee-hive coke its greatest efficiency, as may be judged from the low consumption of coke in the above trials, and only 19·24 cwt. per ton of iron produced. In iron-foundry cupolas, retort coke is preferred to bee-hive coke.

Now, what are the facts? In the bee-hive, the heat is generated by combustion that occurs in contact with the coal that is being coked; in the retort, the coking coal is heated by conduction. Hence, the retort must necessarily yield more coke per ton of coal than the bee-hive, as in the latter, part of the coal itself must inevitably be burned. Bee-hive coke is somewhat harder than ordinary retort coke, because the coke is more highly heated by direct exposure to the burning gas in the bee-hive than it is in the retort, in which it is necessarily heated by conduction through a brick wall, a poor conductor. Now, the lower yield of the bee-hive is apparently inevitable; the greater softness of the retort coke is apparently avoidable. It is a question of getting the coke in the retort as hot as in the bee-hive. Whether this can be accomplished or not is a difficult question in metallurgical engineering. I am inclined to think that it can: I see no insuperable obstacle. Beyond this, the retort permits far more complete recovery of the by-products of coking than is possible in the bee-hive.

But even if the temperature can not be raised as high in the retort as in the bee-hive, the retort coke *may* yet be made as efficient as the bee-hive by adapting the blast-furnace to it; and this is exactly what Samuelson and the continental smelters seem to have done. A single success argues more strongly for the possibility of accomplishing this than a thousand failures argue against it.

In brief, I believe that we may avail ourselves of the undeniable advantages of retort coking, its greater yield of coke, and the recovery of by-products, as the rest of the world has done, either by adapting the retort to the particular coal employed, or by adapting the blast-furnace working to the retort coke, or by both means combined. I do not say that we will, but that we may. That we have not does not show that we can not.

BOSTON, Nov. 11. HENRY M. HOWE.

MANUFACTURE AND COST OF COKE.

Written for the Engineering and Mining Journal by F. Koerner, M.E

In the JOURNAL of November 6th, Mr. John Fulton attempts an answer to my article of October 23d.

My article did not refer specially to the Connellsville region, but broadly to all regions where the bee-hive oven is in use. Before going into the details of Mr. Fulton's strictures, it is absolutely necessary to call attention to the earlier writings of Mr. Fulton on coke, especially his reports in the volumes of the Second Geological Survey of Pennsylvania. Disinterested and attentive readers of these reports feel that Mr. Fulton's is a special plea, not for a better process and greater economy, but for a venerable abuse. He calls to the stand every mistake that has been made with other ovens that were designed for coals entirely different from the Connellsville. His reasoning then is: Because somebody blundered with the Belgian oven, therefore the bee-hive is the best. His reply of November 6th is a sort of supplement to that argument.

After spending nearly a year in the Connellsville region, working there and seeing how they did things, I called the attention of one of the persons interested to the waste and loss in their business. He replied: "My dear fellow, I have not the slightest doubt as to the correctness of your observations; but put yourself in our place: you do not deny that the old ovens make good coke; it finds ready sale; we are making money, and our stockholders are perfectly satisfied; we, as well as all our neighbors, have hundreds of thousands of dollars invested in the old plant; it would take an equal or larger sum, not to speak of time and trouble, to build a better one." I remarked: "But somebody will, after a while, when competition becomes sharper, start new and more rational works, and make more money or undersell you." To his own entire satisfaction, at least, he gave the *coup de grace* to my argument by saying: "Well, that will be hereafter. Our 'Syndicate' will attend to a man who goes fooling around trying to put us to an enormous expense." From his stand-point, this man was perfectly correct; so were the craftsmen of old: "Great is Diana of the Ephesians! Our craft is in danger!"

If, as Mr. Fulton says, a few mines in Fayette County mine a few hundred thousand tons of coal in a rational manner, the writer is only too happy to know the fact; but Mr. Fulton can not use that to rebut my statement, which applies broadly to all districts where coking coal is mined. One, or even half a dozen, swallows do not make a summer.

One hundred bee-hive ovens are about 1400 feet long; but, says Mr. Fulton, "They are only 700 feet long." True, when twice fifty ovens are built back to back, the plant is only 700 feet long; but the man in charge who has to walk along both faces will not dispute that he has to walk 1400 feet; and to that I referred.

To meet my charge of the loss of carbon, he carefully refrains from giving any figures of his own, but he picks up a convenient formula: 1·6 tons of coal give one ton of coke (I carefully qualified this by saying, "Or so it is claimed"), used by me to arrive at the unnecessary ashes, and so proves the loss of carbon to be only 6 per cent. What cogent reasoning!

The loss of carbon is admitted to be from 10 to 27 per cent in the published reports of the Second Geological Survey. It would be interesting to know how much greater it is; but how are we to arrive at any thing like correctness in a business where the sound old principle, "*Omnia in numero, pondere, et mensura*," is almost totally ignored? When I investigated the matter, there were very few mines in Fayette County where the coal was weighed prior to coking. At one of these places, the scale used gave my bodily weight at 785 pounds; on the scale of another mine, I weighed less than nothing, the scale-beam refusing to rise under my weight! Mr. Fulton shows great prudence by not going into figures of his own.

But there are people who do sometimes weigh both coal and coke.

Turning to page 406 of the Journal of the British Iron and Steel Institute for 1877, we find a paper by Mr. A. L. Steavenson, a former president of the Institute, in which he gives the enormous waste of heat in the bee-hive oven process: Two hundred and thirty tons of carefully weighed coal gave one hundred and thirty-eight tons of coke, inclusive of ashes, *with a loss of 62·6 tons of fixed carbon*. It must be borne in mind that the ovens used for this experiment were an improved bee-hive, in which at least the rudiments of an attempt were made to use the escaping gases for heating the ovens. Mr. Steavenson assumes that his hearers are familiar with that kind of thing; at any rate, not a member of the Institute disputed his figures, and we presume that Mr. Fulton will not have the hardihood to do so. An American writer on coke—Mr. Weeks—naïvely remarks, in speaking of this experiment of Mr. Steavenson's: "These facts don't seem to be known to coke-makers."

Mr. Fulton drags in, as an argument, an experiment made with the Carvès oven in England. The results of that experiment have nothing whatever to do with the figures I gave in my article. The Carvès oven was designed and built to coke the lean coals of France and to save certain by-products. In France, it has been a perfect success. Its alleged failure in the experiment mentioned by Mr. Fulton was stoutly and successfully resisted by the Carvès people, and herein they were supported by authorities at least as high as any mentioned by Mr. Fulton. Is it possible that he is ignorant of these facts?

It can not be denied that the Carvès oven gives excellent results with the lean coals of France, wasting no carbon and saving valuable by-products. Why can not an oven properly adapted to American coals do the same?

Why does Mr. Fulton so pertinaciously drag in failures, if they were such, to bolster up an old abuse, and omit all mention of unquestionable successes? Let him turn to the Journal of the North of England Institute of Mining and Mechanical Engineers, and he will find so high an authority as Mr. Bainbridge indorsing the Coppée system of ovens, giving, from actual use of the system, the saving effected by it as high as £5000 sterling per annum on a production of a thousand tons of coal turned to coke weekly. Further, if Mr. Fulton will scour the coke districts of Europe, as I have done, he will find new and improved ovens taking the place of the wasteful bee-hive in Wales, Lancashire, Stafford shire, and Durham, not to speak of France, Belgium, and Prussia. A of these ovens effect not only a saving in carbon and labor, and giv

equally good coke, but they lessen the objectionable amount of sulphur in the coke to a very marked degree.

My figures as to ashes, amounting to over 14 cents a ton on coke (even by taking only 1·6 tons of coal to one ton of coke) are slurred over by Mr. Fulton by calling them a slight amount, and by saying that they form slag with the iron ores of the Northwest. Of course, they form slag; but why does Mr. Fulton so carefully refrain from giving us some figures? Is he afraid to do so? It would be very useful and interesting to hear from a thoroughly competent man what he has to say as to these ashes—from one who does not use the ores of the Northwest, which are, after all, but a comparatively small quantity of the sum total of ores used in our country.

But, after all, we have some hopes of Mr. Fulton. He admits that the question of economy between what he calls the Belgian ovens (but of which the Belgians seem to know nothing when you describe the ovens to them) and the bee-hive is not settled.

In his former writings, such doubts did not trouble him. The bee-hive was the *ne plus ultra*.

What has staggered him?

Perhaps it is the fact that his most "exhaustive" and original investigations as to the porosity and the density of coke were proved to be erroneous.*

Mr. Fulton has not disproved a single one of the figures given by me, and until he does so, all his talk amounts to nothing.

He fancies that I feel I have a "mission." I can assure him that I do not feel a bit like a missionary, although it would be probably impossible to find an industrial field where a thoroughgoing missionary is more wanted than in Mr. Fulton's neighborhood. But I have the best reason to believe that, within a year, I shall have an opportunity to demonstrate to him still more strongly than I have done how poor a thing it is to fight for an industrial abuse in this country.

Making a reply that lacks all true elements of a reply, he has the hardihood to arraign the JOURNAL for admitting my article! Well, the JOURNAL needs no defense. The great body of American engineers know that it is edited by engineers who know what they discuss, and are careful and cautious in what they say.

WILKES-BARRE, PA., Nov. 10

THE DIAMOND MINES OF SOUTH AFRICA.†

By Gardner F. Williams, Oakland, California.

(*Concluded from page 347.*)

Description of the "Blue" Ground.—The diamantiferous or "blue" ground is a hard, dark, greenish-blue cement, which requires to be blasted with dynamite. It might properly be called a brecciated rock or cement, since the mass is composed of angular pieces of black shale, irregular pieces of mica, and several more or less decomposed minerals, all imbedded in a mass of indurated talc, or rock of that nature.

Large masses of "floating" shale or reef are found imbedded in the "blue," also basaltic boulders from one foot to many feet in diameter. These are, without doubt, portions of the rock that surrounded the opening or crater before the deposit of the "blue" was made.

I am of opinion that the formation of the diamond-bearing deposits was due to aqueous rather than igneous agencies—possibly to something in the nature of mud-volcanoes. My reasons for this belief are, first, the physical appearance of the mass of diamond-bearing ground; and secondly, the existence of the diamonds themselves, the presence of which seems more natural in an aqueous than an igneous deposit.

That the masses of diamantiferous material occupy the craters of former volcanoes, there is but little doubt.

In whatever manner the diamonds may have been formed, they must have been crystallized before they were deposited in the mass in which they now occur. No diamonds have been found either in the shale or in the hard rock surrounding the "blue," as might be expected if the diamonds had crystallized where they are found. Again, a great many fragments of broken diamonds are found, and the corresponding pieces are not found near them, showing that they are not in their original position.

One fact deserves special mention, namely, the variety of diamonds not only in different mines, but in different parts of the same mine. It requires no great skill to determine from which place a lot of stones have been taken. The peculiarities consist in color, size, crystallization, black spots in the crystals, and the amount of broken or irregularly shaped pieces, called "bort."

In one part of the mine, the stones are perfect octahedrons, while in another part, the crystallization is more imperfect; in one part, the stones will be white, while in another, the greater number of stones will be yellow.

The original system of mining the Kimberly ground, namely, by open quarry, was without doubt the best for a depth of say 200 feet, because the mine could have been worked in no other way, while the claims were operated by individual owners. But as soon as a greater depth was attained, the removal of the surrounding "reef" and the almost constant covering up of some part of the mine with fallen reef, rendered the cost of mining very great, and also prevented the mining of the "blue" for months at a time in the covered parts of the mine.

Two methods are now advocated for working the mine. Many cling with pertinacity to the old open-mine method, and advocate the removal of the shale to an angle of safety, so that it would be impossible for it to cave into the mine. The friends of this method are relying upon the hard rock remaining in place, when exposed for several hundred feet in depth. The enormous quantity of shale (4,679,000 cubic yards) to be removed makes this method too expensive; and besides, sooner or later, the hard rock would give way and the mine be filled with huge masses of exceedingly hard rock. The cost of removing this, should it fall into the mine, would be very great.

The other method of working the mine is by sinking shafts in the solid ground outside of the mine, and drifting to the "blue" ground. The "blue" ground could then be mined by drifting and stoping. The greatest difficulty in the way of close mining is the scarcity of timber. All timbers and other lumber have to be brought from the Baltic or from America.

The ground must therefore be mined with the use of as few timbers as possible. Fig. 2 shows three shafts that were sunk originally to the hard rock for the removal of reef. Two of these shafts, namely, the Central and French Company's (Section, Fig. 3) are continued into the hard rock, and drifts will be run to the "blue" ground. The cost of sinking these shafts has been very great, owing to the extreme hardness of the rock. In my judgment, *incline* shafts would be much cheaper. The inclines could be commenced at the point where the vertical shafts cut the hard rock, and could be run with the view of striking the diamond-bearing rock at a depth of 600 or 700 feet.

At the time of my last visit to the Kimberley mine, in August, 1885, nearly all the fallen *débris* of the previous year had been removed and seven shafts had been sunk in the bottom of the mine. "Blue" ground was hoisted at the several shafts and sent to the surface on aërial trams. Several methods of underground mining were in use, only one or two of which deserve notice. At Hall & Co.'s mine, the "blue" is mined as follows: From the main shaft, a drift is run through a piece of ground. Every thirty feet, a stope or breast is started on each side of the main drift. These stopes are 18 feet wide, leaving pillars 12 feet thick. The stope is carried up 40 feet above the floor of the main drift, leaving 10 feet between the top of the stope and the floor of the stoped gallery above it.* After two or three levels have been worked out, small drifts will be run through the centers of the pillars, and a portion of them will be stoped out. When the pillars have been so much weakened as to be unsafe for further working, they will be blasted and the whole superincumbent mass caused to cave on the solid ground below. When sufficient time has been allowed for the broken ground to become settled, drifts will be run through it and the "blue" ground extracted. In another part of the mine, the stopes are filled with *débris* from the surface as fast as the blue ground is removed.

Any method of mining by sinking shafts in the bottom of the pit is very precarious, owing to the fact that a subsidence of reef may occur at any time and all the works may be buried underneath a mass of *débris*.

Depth of the Blue Deposit.—The depth of the diamond-bearing deposit is wholly unknown, nor has any attempt been made to test it by boring or drilling deep holes. As mentioned above, the mine has been worked to a depth of nearly 500 feet as an open quarry, and a shaft has been sunk nearly a hundred feet deeper, with no signs of the diamond-bearing ground giving out. On the contrary, the "blue" ground is richer than it was nearer the surface.

The amount of water hoisted from the mine is from 11,000,000 to 13,000,000 gallons per annum at a cost of sixpence per load of 100 gallons.

THE DE BEERS MINE.

This mine is second to the Kimberley, in richness and value, and presents some features worthy of mention. Attention is called to the plan Fig. 5 and sections Figs. 6, 7, and 8. Figs. 5, 6, and 7 represent the mine at the end of the year 1883, Fig. 8 represents the mine at the end of 1882, and the broken line in the "blue" represents the mine at the end of 1883. The depth of the mine at the end of 1883 was 300 feet. During the year 1884, this depth was increased to 330 feet. A shaft has been sunk to a depth of 460 feet from the original surface.

The De Beers mine is larger than the Kimberley. It contains 610 claims, covering about 13½ acres. The value of the De Beers "blue" ground is below that of the Kimberley.

One of the peculiarities of the De Beers mine is the large mass of floating shale in the center of the mine. This mine differs from the Kimberley in that basaltic rock appears on the surface and nearly surrounds the mine. The two concentric rings of igneous rock, shown on Fig. 5 by the heavy broken lines, come up through the "blue ground." This rock is from one to three feet thick, and was thrown up after the diamond-bearing material was deposited.

The Kimberley and De Beers mines are similar in many respects. The characteristics of the "blue ground" are the same in both. Both are surrounded by yellow and black shale; but in the latter mine, this does not appear on the surface except on the south side. Section F, Fig. 7, shows the same hard rock as that which surrounds the Kimberley deposit. The nature and position of this rock were determined by a test-shaft sunk for that purpose. On the west end, the diamond-bearing *yellow* ground covers a large part of the mine; but it is of too low grade to pay cost of working. On the west end of the Kimberley mine, there is also a low-grade diamond-bearing deposit.

In the De Beers mine, the value of the "blue" ground has increased very much in depth. The average yield of a load of "blue" ground near the surface was only four tenths of a carat, while during the past year the yield has been eight tenths of a carat per load.

The amount of water pumped from this mine during the year 1884 was 8,000,000 gallons, at a total cost of £8000, being two shillings per 100 gallons.

OTHER MINES.

The Du Toit's Pan mine lies southeast of the De Beers mine and contains 1453 claims of 31 feet square each, equal to about 32 acres. The yield of the ground per load is $\frac{2}{100}$ of a carat, value 7s. 5d. This mine is worked with little or no profit; in fact, it was claimed at Kimberley, that both the Du Toit's Pan and Bultfontein mines were producing diamonds at a loss to the companies.

The Bultfontein mine lies to the south of the Du Toit's Pan. There are 1003 claims in the mine, covering about 23 acres. The yield of the "blue" per load is $\frac{24}{100}$ of a carat, value, 5s. 6d.

OPERATIONS AND VALUES.

Method of Saving the Diamonds.—The "blue" ground is hoisted to the surface and hauled out to the "floors," where it is spread out to a depth of about one foot. It lies there for several months, being wet from time to time by means of a hose or sprinklers, rolled with heavy rollers (6

* See the ENGINEERING AND MINING JOURNAL.

† A paper read at the Meeting of the American Institute of Mining Engineers, St. Louis, October, 1886.

* The average cost of mining and delivering a car-load of "blue" to the bottom of the main shaft is about 2 shillings and 6 pence.

Fig. 4.

KIMBERLEY MINE.

SECTION C.

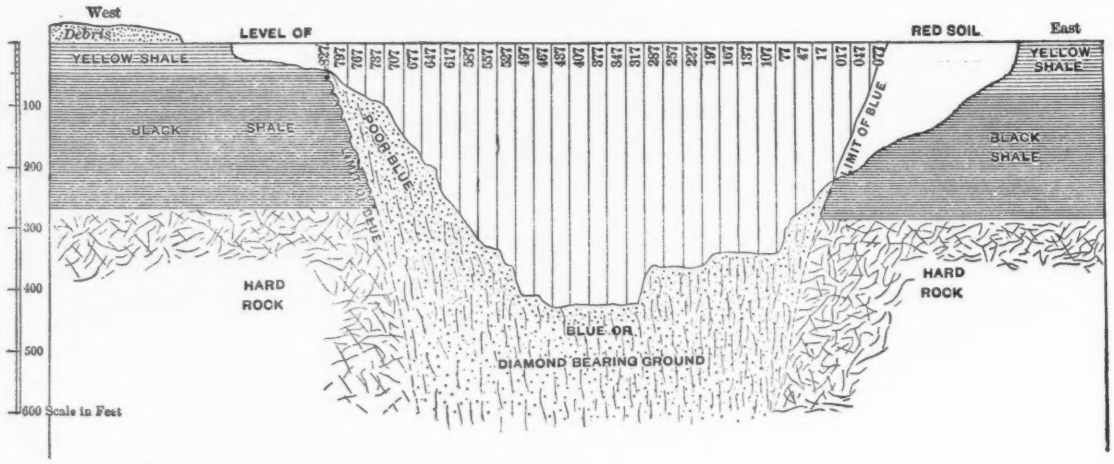
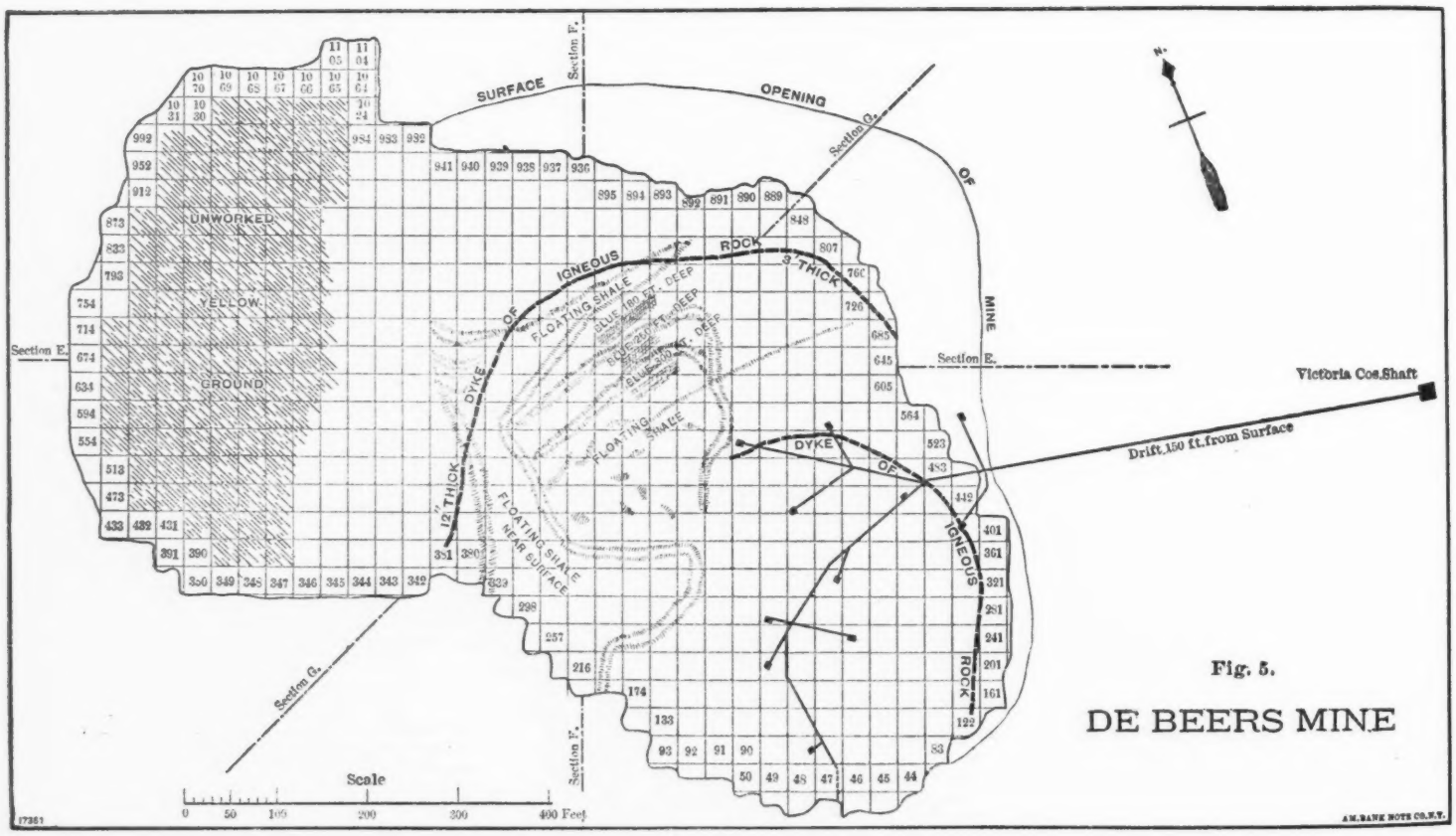


Fig. 5.

DE BEERS MINE



tons), and harrowed, in order to assist the process of slaking or disintegration.

After the "blue" has become pulverized, it is hauled to the pans and put through revolving screens. The fine stuff is put through a pan, while the coarse is sent back to the floors to undergo further slaking. The pans are of iron, and resemble somewhat the agitators used in silver mills, except that they have a central discharge. They are about ten feet in diameter.

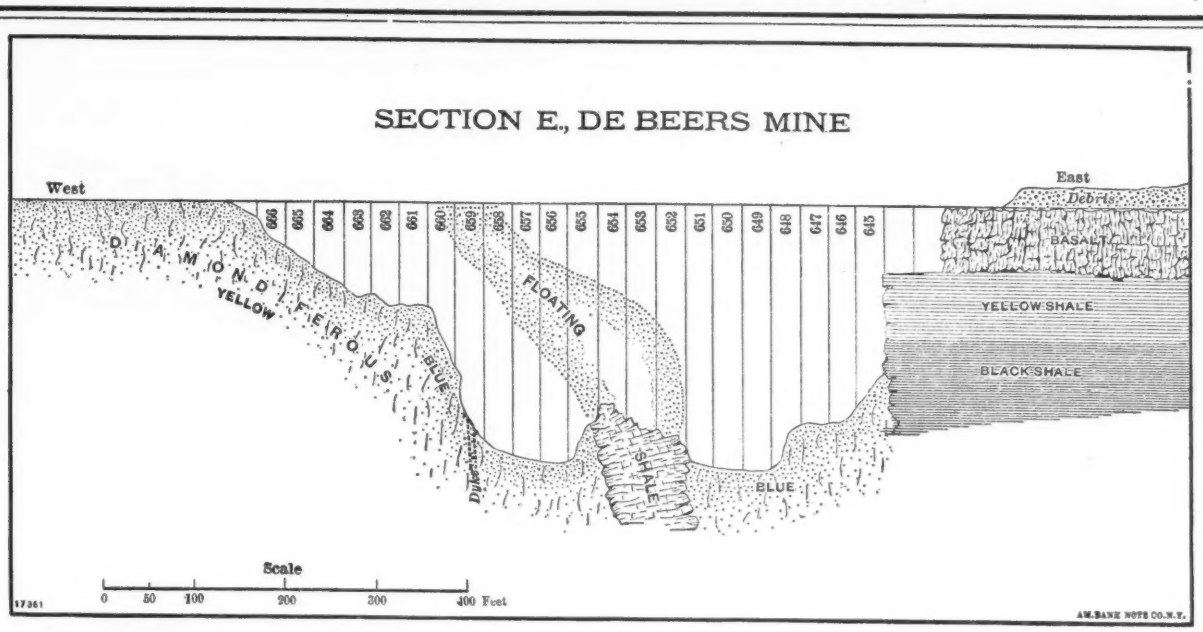
The pulp is fed into the outer edge of the pan with sufficient water to make it quite thin, so that the diamonds will settle to the bottom of the pan. The specific gravity of the diamond is a little more than 3 5, while that of quartz is about 2·6. The diamonds settle to the bottom, while the matrix, being of less specific gravity, flows over the inner side or rim of the pan, and is deposited on the waste-dumps. The diamonds, together with the heavier parts of the matrix, are taken from the pans, placed on tables, and sorted.

The following table shows the different ways of saving diamonds and the relative amount saved at each place. The table shows the result of working 10.080 loads of "blue" from the De Beers Mining Company's property, which is a part of the De Beers mine :

	Carats.
Diamonds found in excavating	16
" " " opening out loads on floors	223
" " " breaking up " " "	534
" " " harrowing and watering floors	78
" " " loading up from floors	319
" " " first sorting after washing	11 424
" " " second " " "	2,471
" " " final sorting on percentage	209
Total actual finds	15,274

It is estimated that the coarse cylinder screenings, which were redeposited on the floors, amounted to nearly 2000 loads, which would yield, on an average, $\frac{2}{3}$ of a carat per load.

This ground was excavated from the underground galleries at a depth of 380 feet, and from about the center of the claim.



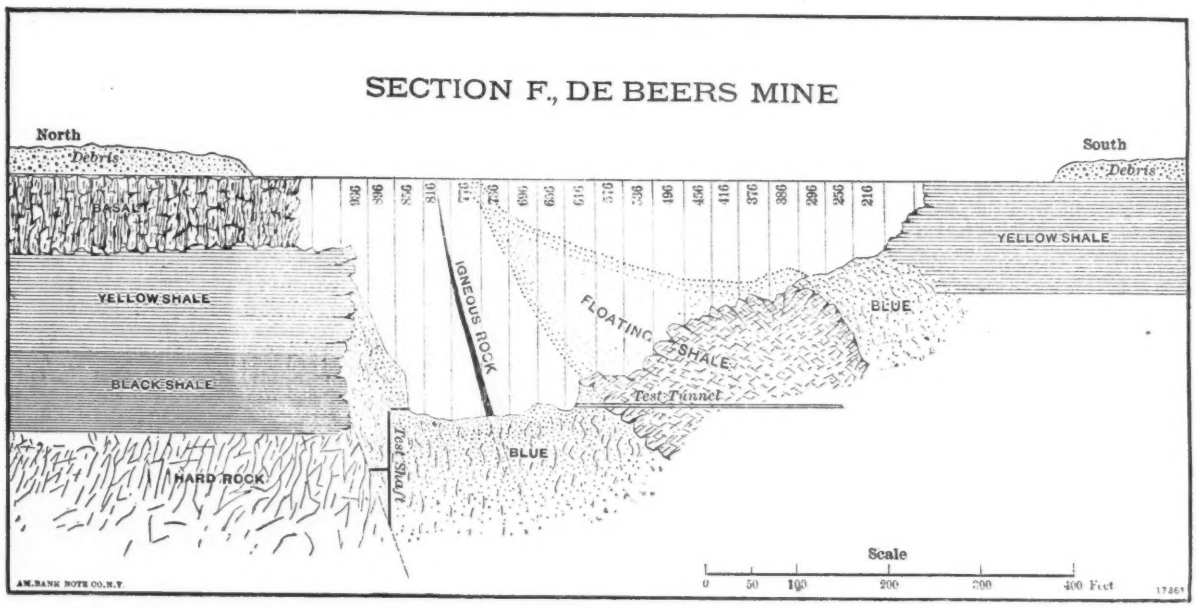
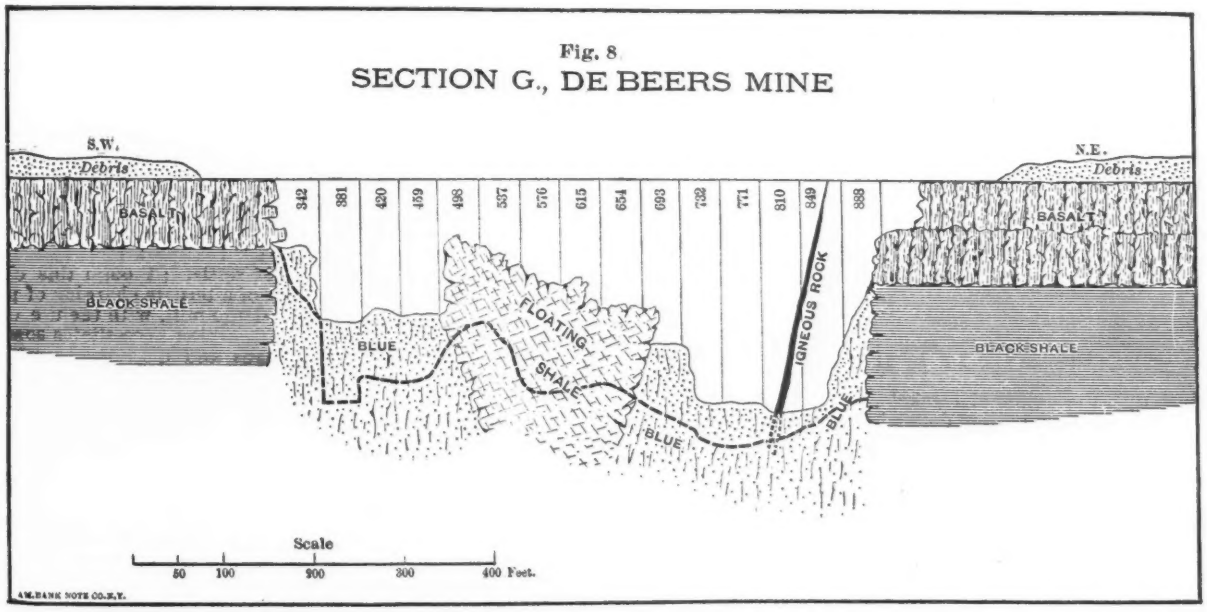


Fig. 8



Circular Shaft.—About 1000 feet from the north boundary of the De Beers mine, a circular shaft, 21 feet in diameter, is sinking for the purpose of working the mine. The method of constructing this shaft is certainly novel. It is described as follows :

"The circular shaft, of 21 feet in diameter, is to be carried down through the 75 feet of basaltic rock that lies near the surface. From this depth, two shafts, of seven feet in diameter, just within the periphery of the 21-foot circle, are to be sunk 220 feet through the black shale to the hard rock, or some 300 feet in all from the surface. A circular shaft, 18 feet in diameter, is to be sunk into the hard rock. On the hard rock as a foundation, the lining of the shaft, upward to the surface, is to be built of dressed stone, reducing the 21-foot diameter to 18 feet. The black shale between the two 7-foot shafts will be picked away, as the building of the lining rises to the surface."

I am at a loss to know, why a shaft of this description is sunk, in preference to a rectangular shaft with compartments. Its cost must greatly exceed that of the latter, and its usefulness will be much less.

Relative Value of Diamonds from Various Parts of the World.—Of

the diamonds found at Kimberley, the average value per carat is from 17 to 30 shillings.

This includes the whole mass of diamonds, which contains a very large percentage of poor stones and "bort."

It will be noticed that the *river* stones from Barkley West sell for a much higher price per carat than the *mine* stones. I have been told by diamond merchants in London, that the perfect stones of South Africa, when cut, are as valuable as those from Brazil or any other country, and that the best experts can not tell the difference. A brilliant is a brilliant, and it matters not whence it comes.

The diamonds are sent to England from Kimberley through the mails. Before the completion of the railroad, the diamond mail left Kimberley once a week. The average value was about £60,000. The coach was guarded by a mounted escort of three men.

Cost of Fuel.—The cost of fuel has been at all times very great. The Boers bring the wood a distance of 100 miles or more, and the price has been as high as £30 per load of less than two cords. The prices of wood and coal during 1885 were as follows:

Kameelthorn wood, 3s. 6d. per 100 pounds.

Olive wood, 9s. per 100 pounds.

Welsh steam-coal, £11 per ton, delivered at the fields.

This included the cost of transportation, nearly 100 miles on wagons. During the present year, the railroad has been completed to Kimberley, and the cost of all supplies will be greatly reduced.

River Digging at Barkley.—The river diggings mentioned in the first part of this paper are still worked. The monthly yield of diamonds is from 2500 to 3500 carats, valued at from £2 to £2 10s. per carat. The diamonds are found in strata of gravel along the Vaal River. Shafts are sunk to the pay-stratum, which is drifted and washed. These mines are worked with little or no profit.

Illicit Diamond Buying.—In the Cape Colony, the buying and selling of diamonds is regulated by statute, which provides that all persons buying or selling diamonds must take out a license, and all diamonds sold must be registered.

It also provides for the severe punishment of persons found violating the law. Notwithstanding the stringency of the law, and the existence of a large detective force, there is an extensive illicit trade in diamonds. It is the result of the production of diamonds on so large a scale, and the many opportunities offered for stealing.

The white overseers, as well as the natives, must pass through the searching-houses as they leave the mine. The natives resort to all imaginable devices for concealing diamonds, and, in spite of the searchers, get away with many stones. The most common and, I might add, the most successful method is *swallowing* the diamonds. It is said that a Kafir will swallow sixty carats of diamonds.

The detectives employ "trap" negroes or natives, to whom stones are given to sell to the "I. D. Bs." (Illicit Diamond Buyers) for the purpose of detecting and convicting them. Of late, there has been an innovation in the illicit diamond business. Rough diamond-shaped stones are made of "paste," and sent out from Europe to dealers at the fields. These are sold to the natives, who offer them for sale as genuine diamonds. It was a very clever device—a reproduction, as it were, of the wooden nutmeg business, but was successful for a short time only.

It is estimated by the government officials at Kimberley, that one quarter of the whole product of diamonds is stolen, and reaches the market through illicit channels.

The percentage of diamonds stolen is, no doubt, very great; but I think the above estimate is entirely too high. My reason for this opinion is based on the result of working the 10,080 loads mentioned above.

This test was, doubtless, made with great care, and the loss of diamonds by stealing was, presumably, very small, as the yield per load is above the average from this mine. *Ninety per cent* of the diamonds were found in the first and second sorting after washing.

It is claimed that the greatest amount of stealing is done on the floors; but as only 7½ per cent of the diamonds recovered were from the floors, it seems to me that the percentage of loss given above is too high.

Tramways.—There are 170 miles of tramways in and about the mines and floors. The gauge is eighteen inches.

Values and Prices.—For many years, the total value of the diamonds produced was about two million pounds sterling per annum. About three quarters of this amount was from the Kimberley mine alone.

Since 1883, the product of diamonds in the Kimberley mine has fallen off, owing to the frequent subsidence of "reef," while the product of the other mines has increased. The relative amounts produced during the years 1883 and 1884 may be seen in table below, together with partial returns for 1885.

A summary of the De Beers Mining Company's report for the year ended March 31st, 1886, will be found below. This is the report of the most prosperous company in the De Beers mine, and presents many interesting facts.

It is claimed that the diamond markets of the world will absorb an annual production of fifteen million dollars' worth of diamonds, without any material fall in price. The annual production of the Kimberley mines has been from ten to fifteen million dollars' worth for the past fifteen years.

The price of diamonds has been considerably reduced, but perfect stones of moderate size still bring large prices.

Should there be any great depreciation in the value of Kimberley diamonds, the two mines, Du Toit's Pan and Bultfontein, will be shut down, thus greatly diminishing the output. A consolidation of all the claims in the Kimberley and De Beers mines has been under consideration for some time. When this is accomplished, the prices of diamonds will be regulated.

There is no doubt that the diamond-bearing deposits will be found to extend downward to great depths, but with greater depth will come additional cost of production, which may, in turn, be overcome by the increase in the quantity of diamonds per cubic yard.

The future success of the Kimberley mines depends upon the adoption of a systematic and economic plan of underground mining through shafts sunk outside the disturbed area.

When the mines are opened under such a system, the output of diamond-bearing ground will be regular and continuous for many years, if not for many decades, and the net returns will greatly exceed those of the present system of working.

TABLE SHOWING QUANTITY OF "BLUE" HOISTED AND VALUE OF THE SAME; ALSO AMOUNT OF REEF AND WATER HOISTED.

	Date.	Kimberley.	De Beers.	Du Toit's Pan.	Bultfontein.
No. loads "blue"	1883	350,000	700,000	1,893,792	2,103 475
	1884	310,000	880,000	2,019,498	1,242,781
	1885	360,000	650,000	.....	.....
Diamonds recovered—carats	1883	947.817⅞	426.728¼	511,323	504 834
	1884	642 437¼	497.596¼	498,550	566,200
	1885	523,771½	566,234½	.....	.....
Diamonds recovered, per load (16 cubic feet)	1884	1·42½	·40†	·27	·24
Value of diamonds	1883	£1,044,000	£469,400‡	£708,199	£581.377
	1884	634,406	592,968	760,218	588,465
Amount of reef hauled—cubic yards	1882	1,700,000	.....	.....	.....
	1883	1,000.837	71,847	20,000	23,000
	1884	421.353	123.667	.....	.....
Gallons of water	1883	10 688,000	10 950,000	.....	.....
	1884	13,247,742*	8,000,000	.....	.....
Cost of hoisting water	1883	£2,672	£10 800	.....	.....
	1884	3,312	8,100	.....	.....
No. of engines	1884	81	61	122	72
No. of claims	.....	410	610	1,453	1,003

* At 6d. per 100 gallons. † In 1885, the average was ·80. ‡ Estimated.

TABLE OF EXTRACTS FROM REPORT OF THE DE BEERS MINING COMPANY FOR THE YEAR ENDED MARCH 31ST, 1886.

Amount of Waste and "Blue" Hoisted.

Floating reef	94.879¾	loads.
Main "	6,42·½	"
Fal en "	468,248¾	"
"Blue"	391,749	"
Total "blue" hoisted since 1881	1,293,452	"
Total dead ground since 1881	1,491,843	"
Amount "blue" washed in 1885	299,407	"
Balance "blue" on floors March 31st, 1886	230,660	loads.

AVERAGE VALUES REALIZED AND COST OF PRODUCTION.

	Per carat. £ s. d.	Per load. £ s. d.	Cost per load. £ s. d.
1881	1 4 1	0 16 11	.. .. ..
1882	1 7 3	1 1 8	0 13 2
1883	1 1 3	0 19 1¼	0 11 9½
1884	1 2 5	1 2 10	0 10 0
1885	1 0 8	0 17 9	0 8 1
1886	0 16 4½	1 1 7	0 8 3½

	£	s.	d.
Actual cost of mining "blue" ground 1885-86	140.270	12	5
Cost of removing floating and main reef and debris	51,176	5	2
Amount of dividend for year ended March 31st, 1886	171,814	8	0
Revenue from "blue" ground	323,499	7	2

COMBINED AMALGAMATION AND CONCENTRATION, AT THE MONTANA COMPANY'S MILL.

Late successful experiments in the Comstock mills on the treatment of low-grade ore by combined concentration and amalgamation have emphasized the results obtained by this process elsewhere, and suggest its more frequent use by mining men. One difficulty in its application has been the obstacle encountered in getting a regular feed from settlers on to concentrators, and without a destructive excess of water. In new mills, this is most readily remedied by use of the Boss continuous system of amalgamation, with which it is possible to use concentration either before or after the pans without any difficulty.

There is no difficulty in settling either the tailings of concentrators to give a thick continuous discharge of pulp to the pans, or in doing the same thing with the settler tailings for a regulated feed to the concentrators. This is done simply by very large pointed boxes with siphon discharge, such as used in dressing-works in Germany, and such as were lately successfully used to settle the tailings of a 50-stamp silver mill before concentration by the Montana Company. Such tanks, properly designed, will deliver a thick pulp with a loss of fall of about two feet only, and a practically clear overflow, even after the grinding of pulp in pans.

With the ordinary settling-tank system of working in silver mills, it is not so easy to arrange a regular feed to concentrators after pans, because of the intermittent discharge of settlers; though this can be in part accomplished by a proper system of alternate charging of pans and overlapping discharge of settlers in a large mill, with the use of agitators to keep a body of pulp in reserve. This plan necessitates some little extra labor and trouble in charging pans and discharging settlers at short intervals. In most cases, with the tank system, it is best to amalgamate before concentration, and there are other benefits than mere convenience in this arrangement on many ores.

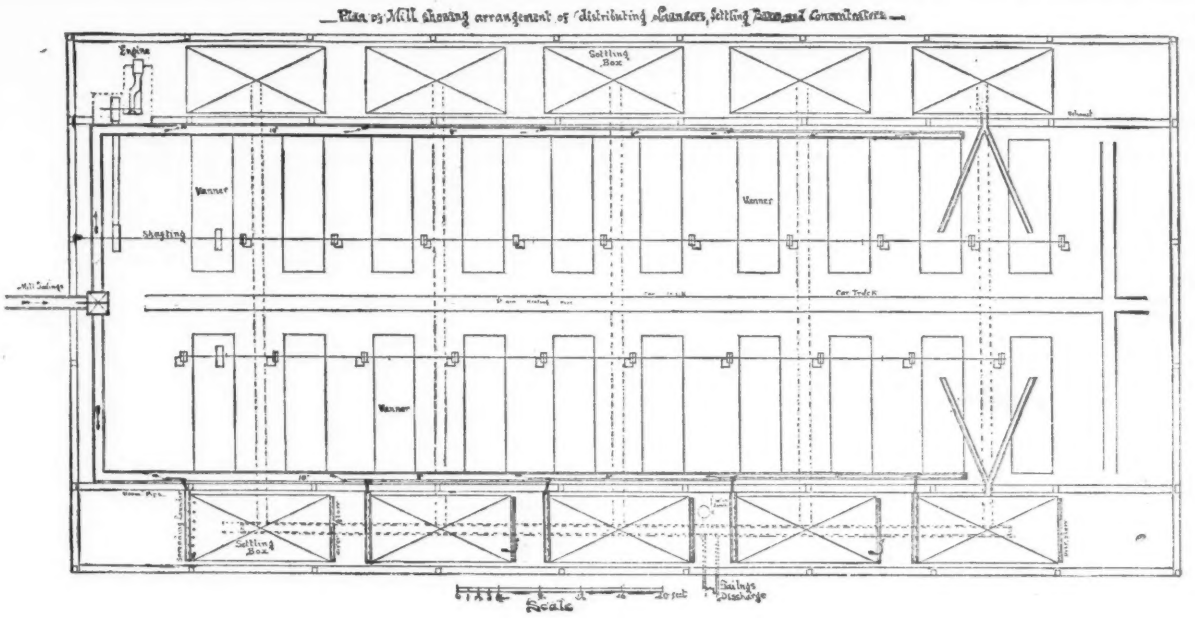
Mr. John Darlington, Consulting Engineer of the Montana Company, has reported that "The concentration of the battery pulps before amalgamation has been attended with most favorable results. (1.) The sulphides (obtained as concentrates) render the pulp fairly clean for the pans. (2.) The bullion, instead of being low, is brought to a high degree of fineness. (3.) It has led to very important and valuable saving of mercury in the pans; and in melting the crude bullion, to a material reduction in the weight of 'granulations' or metallic slag."

Mr. John Bayliss, director of this company, says: "The Frue vanners and the buildings have cost £5000. The system of concentration before amalgamation was adopted after a series of experiments and investigation during some months. It has been most successful, and one profitable result has been to increase the fineness of the bullion from 550 fine, as it was by the old process, to 930 to 950 fine. A considerable saving is also effected by the extraction of the base ore in the process of concentration before amalgamation in the pans; and by the present process, from $3 to $4 more per ton of ore treated is obtained than by the old process. This, on 3000 tons a month, is some £28,800 a year, on an outlay of £5000. The present process has resulted in reducing the loss of quicksilver from 1·55 pounds per ton to ·8 pound in June and ·62 pound in July."

Concentration in connection with amalgamation has long been known in Mexico, but its application to low-grade ores is only rendered possible by perfect automatic machinery. Mr. John C. F. Randolph, M.E., was the first to introduce perfect concentration in connection with pan amalgamation into Mexico at the works of the Batopilas Mining Company.

A low-grade ore must have a cheap treatment, and many low-grade ores will neither amalgamate well nor concentrate satisfactorily, but yield a good percentage by the combined process; as the silver and gold that will not amalgamate will concentrate, and *vice versa*. In many cases, with moderately high-grade ore, it is more profitable to treat as described than to crush dry and roast; because the extra cost of treatment involved in the latter process more than equals the gain in percentage extracted. At the Silver King mine, in Arizona, $40 and $60 silver ore has been concentrated for the past nine years, although a roasting plant is on the ground. In this case, the ore happens to concentrate well, without necessitating amalgamation.

The Montana Company's mill contains 20 Frue vanners, three stone-breakers, 60 head of stamps, amalgamating plates and tables for obtaining free gold. The machinery is all said to be of the very best quality, as might be expected from so eminent a firm of constructors as Messrs. Fraser & Chalmers. The arrangement of the concentrators is shown in the accompanying illustrations.



CONCENTRATION MILL OF THE MONTANA COMPANY, LIMITED.

Treating 105 Tons Daily of the Tailings from 50-Stamp Wet Crushing Silver Mill.

THE RUSSIAN OIL WELL—SPOUTING 11,000 TONS A DAY.

The telegraph has briefly reported the recent outbreak of the great Russian oil well at Baku. Fuller details show that in the early part of last month it yielded at the rate of more than 11,000 tons a day, or more than all the 25,000 wells in this country. It is called Tagieff's well. A correspondent of the *Pall Mall Gazette* says that during the birth-throes of a Baku oil fountain, stones are hurled a terrific distance, and a high wind will carry the fine sand spouting up with the oil miles away. The roar of the gas preceding the oil-flow is terrific, and the atmosphere for a time is rendered almost unbearable. Compared with such fountains as Droojba and Tagieff, the Great Geyser of Iceland is a pigmy. Luckily, the gas soon clears off, the stones cease to rattle about the surrounding buildings, and then the fountain becomes as orderly as those in Trafalgar Square, pouring upward sky-high with a prodigious roar, and forming round about the thirteen or fourteen-inch orifice vast shoals of sand, beyond which the petroleum gathers in lakes large enough sometimes to sail a yacht in.

How long Tagieff's "spouter" will last, and what its ultimate yield will be, will depend upon circumstances. The Droojba lasted 115 days, flowing for 43 days at an average rate of nearly 3400 tons a day, 31 days at 1600 tons, 30 days at about 900 tons, and 11 days at 600 tons. The owners then managed to fix a "cap" over the orifice and placed the well under control. The total amount of oil spouted, at the very lowest estimate, was 220,000 tons, or 55,000,000 gallons—the highest estimate put it 500,000 tons. At a rough estimate, had the oil spouted in America, it would have realized about a million sterling, and made its owner a millionaire, instead of which the fate of the fountain at Baku was to render its master a bankrupt; for the shoals of sand engulfing neighboring buildings led to claims for damage surpassing what he got for the small quantity of oil he was able to catch and store, while the rest, flowing beyond on to other people's property, was in most cases "annexed" and not paid for. It is to be hoped that Tagieff & Co. will not be so unlucky; but in any case, most of it is sure to be wasted.

During the fall (as if to spite the American Consul, who reported a short time ago that Baku was beginning to get dry) there has been a whole succession of fountains, and in consequence there is such a glut that Tagieff's will hardly be able to obtain for a ton (250 gallons) of their oil the price that the London oil importer pays America for a single gallon of the refined article. For want of a pipe line to run it to the Black Sea, most of the 2,750,000 gallons of oil spouted daily by the fountains of Tagieff's will sink into the soil, deteriorate in the lakes, or mingle with the waters of the Caspian. Such a barbarous waste of the world's resources will be as keenly regretted by the Russian government as by any indignant scientist in Europe. If the resources of Tagieff & Co. prove inadequate to quell the fountain (that is, cap over the well and keep the oil below the surface until wanted), the Minister of Crown Domains will doubtless put into effect a policy agreed upon on the occasion of the Droojba outburst, and send engineers with full power to utilize all available means to plug the orifice.

Whether they will succeed is another matter. When the Droojba began to slacken in force, it was still powerful enough with its sand-blast,

formed by the commingled sand and oil, to grind to atoms in an hour or two the 3-inch iron boiler-plate the engineers tried to fasten on the top of the tube. On the 5th of October, the fountain of Tagieff's was spouting with ten times the intensity of the Droojba when the latter achieved this memorable feat, and however much the Russian government may "command," the latest of the Baku gushers will probably prove more than a match for the engineering skill and resources brought to bear upon it.

STRIKING CONTRASTS.

The paraffine industry is one in which Scotland takes great pride, and there are optimists who think that it has still an important future before it. To produce Scotch paraffine, every year over 2,250,000 tons of shale coal have to be dug from mines, and the energies of thousands of men have to be utilized before the 70,000,000 gallons of crude shale oil extracted from it can be sent to the refineries to be distilled into the illuminant used in lamps. At Baku, a few men bore a few hundred feet, and from the tube they thrust into the bowels of the earth issues, without any further human effort, tens of millions of gallons of oil ready for the refinery. It is thus no exaggeration to say that it is a thousand times easier to obtain oil for lamps at Baku than in the shale oil districts in Scotland. To quote a few instances of what the five hundred wells at Baku can spout forth: Noble Brothers' No. 18 has yielded from a depth of 721 feet nearly 30,000 000 gallons of oil; their No. 9 well, from a depth of 642 feet, 40,000,000 gallons, and their No. 15 well, from a depth of 595 feet, 73,000,000 gallons of oil! That is to say, a single gang of men, a score at the outside, boring for about a year, is able at Baku to bring to the surface more oil than all the mines, men, and shale oil distilleries of Scotland during the same period put together. All Scotland takes a year to produce 70,000,000 gallons of crude oil. The No. 9 well of Noble's spouted its 40,000,000 in five weeks. Once the pipe line is laid down from Baku to the Black Sea, and begins its steady yearly yield of 160,000,000 gallons, the Scotch paraffine trade will suffer from the competition of Russia as keenly as the petroleum industry of America. Hence both the United States and Scotland would be glad to hear that Baku was drying up, instead of yielding more copiously every year.

CHLORINATION OF GOLD ORES.*

Plymouth Consolidated Gold Mining Company, Amador County, Cal.

The ore, as it is raised from the mine, has an average assay value of $11 a ton, chiefly in the form of free gold. All the ore goes directly to the stamp-mills, of which there are two. The older and larger mill contains sixteen batteries of five stamps each, with one Frue vanner to each battery. The new mill has eight batteries of five stamps and two Frues to each battery. The large mill is driven by Leffel turbine-wheels, with a pressure of 65 feet and 14 feet suction, and a consumption of 600 miners' inches of water, or by a Donnelly ("hurdy-gurdy") wheel, with a pressure of 570 feet and a consumption of 100 inches of water. Either or both may be used, as circumstances or the supply of water may require. The smaller mill is driven by "hurdy-gurdy" wheels, with a pressure of about 280 feet and a consumption of 150 inches of water.

At both mills, the pulp from the stamps passes over twenty-four feet of double sluices on its way to the Frues. Copper plates are laid on the bottoms of the sluices; and in each set, all except the upper ones are silver-plated.

The bullion from the stamps is about 800 fine in gold and 200 in silver. The concentrates from the Frues average from 1¼ to 1½ per cent of the ore stamped. They very rarely exceed 2 per cent. I was unable to get the exact assay value of the concentrates, but it is said to vary between $100 and $175 a ton.

The concentrates are treated at the chlorination-works at the rate of one hundred and twenty tons a month. The capacity of the works is somewhat greater than this; but as the supply of concentrates is limited, it is not deemed advisable to work them up any faster.

Care is taken to keep the concentrates always damp until they are put into the roasting-furnace. If this is not done, a decomposition of the pyrites begins, forming lumps that do not roast, and which consequently cause a loss of gold in the residues from leaching.

A *Fortschaufelungsofen* is used for roasting. Its dimensions, including fire-box, are 12 feet by 80 feet. The hearth is one continuous plane, but the charges, of which there are three in the furnace at one time, are kept entirely separate. The furnace-men call the three compartments the "drying," the "burning," and the "cooking" compartments. In the middle or "burning" compartment, the ore is spread out very thin, and occupies about double the space of either of the other compartments.

The furnace is worked by eight hour shifts, one man on each shift, and one charge is drawn and a new one added in each shift. The charges weigh 2400 pounds, and carry about 10 per cent of moisture. The ore averages about 20 per cent in sulphur, and just before the sulphur ceases flaming (in the second division of the furnace), 18 pounds, or ¾ per cent, of salt are added to the charge.

The roasted ore from each shift is kept by itself on the cooling-floor until a tankful (about 4 tons) has accumulated from a single man's shift: then that lot is worked by itself. This enables the person in charge the better to control the roasting; for if only one lot out of the three is bad, it is presumable that the fault lies with the workman; but if all three are bad, the probabilities are, that there has been a material change in the character of the ore, and the roasting process must be altered accordingly.

The vats for chloridizing the roasted ore are 9 feet in diameter by 3 feet in hight, and are four in number. They are slightly inclined, so that they will drain completely. The bottom of each tank is occupied by a filter about 6 inches thick, composed as follows: Light strips of three-quarter inch wood are first laid in the bottom of the tank at intervals of about one foot. Across these strips, are laid six-inch boards, leaving cracks of an inch or more between the boards. On top of this loose floor, are placed coarse lumps of quartz, and on top of this again finer quartz material, until a total depth of about five or six inches is obtained. Finally, this "sand-filter" is covered by another loose floor; the boards lying crosswise to the loose floor beneath and pretty close together. This upper floor is intended merely to furnish a shoveling surface, so as to permit the removal of the leached ore from the tanks without disturbing the filter.

The ore to be chloridized must be damp (about six per cent moisture). The working test is, to take a handful of the ore and squeeze it, then open the hand, and if the lump immediately begins to crumble and fall apart (not run), the ore has the requisite amount of moisture.

The damp ore is screened into the tanks, so that it will lie as loosely as possible, and facilitate the penetration of the chlorine gas. A coarse screen of one half inch mesh is used for this purpose.

The tanks are only filled up to within about three inches of the top. This is to insure that the entire contents of the tank are covered by water in the subsequent leaching; otherwise, there will be great difficulty in washing out all the soluble gold.

As soon as the tanks are filled as stated, they are ready for the introduction of the chlorine gas. This is introduced into the bottom of the tank from two opposite sides, and is continued until ammonia held over the ore gives off dense fumes of ammonium chloride. This usually takes about four hours. When this point is reached, covers are placed on the tanks and the cracks are luted with a mixture of leached ore, bran, and water. The gas-generators, of which there are two employed at one time in charging a tank, are allowed to work on until they are exhausted; then they are disconnected and the holes in the tank are plugged.

The tank is usually charged with gas in the morning, and is left standing for two days. On the third day, the ore is leached. The tank is first filled with water and allowed to stand a few minutes, so that the water may penetrate all the ore. If no more water is absorbed, the liquor is drawn off at the bottom, care being taken to keep the tank full of water during the entire operation, which takes from four to five hours.

In charging the tank, a gunny-sack is laid on top of the ore, where the wash-water is afterward to be introduced, in order to better distribute the water in the tank and prevent its washing and packing the ore.

The liquor from the leaching-vats is conducted to settling or storage-tanks, and about 25 pounds of sulphuric acid (66 degrees B.) are added. (Experience has shown this addition of acid to be advantageous in obtaining a clean product in the subsequent precipitation. The chemical reaction is, however, by no means clear.) It is usually allowed to stand for twenty-four hours, but two hours are quite sufficient. It is then run into precipitating-tanks, and the gold is precipitated by a solution of sulphate of iron. The iron solution is added until, after stirring, a further addition produces no purple color. After the gold is precipitated, it is allowed to stand two or, if convenient, three days to settle; then the supernatant liquor is drawn off with siphons into a second settling-tank, where any gold that may have been drawn off by the siphons has a second opportunity to settle. The liquor stands in this tank until it is necessary to run it off to make room for another charge. Very little gold is found in this tank, and it is therefore only cleaned out once during the year. In the mean time, fresh liquor has been run into the precipitating-tanks upon the gold already precipitated there. In this way, the gold is allowed to accumulate until the semi-monthly clean-up. Except when it is necessary to have them open, the precipitating-tanks are kept covered and locked.

In making the clean-up, the supernatant liquor is siphoned off, the gold gathered up and placed in a filter of punched iron lined with a sheet of ordinary filter-paper, and washed with water until all the acid and iron salts are removed. It is then dried, melted in crucibles, and cast into bars.

The works extract from 95 to 96 per cent of the assay value of the concentrated sulphides. Two men, on day shift, attend to all the work of handling the ore after it is washed (the leaching, etc.). The head man receives $3, the other $2 50 a day. Owing to the limited amount of ore allotted to the works, only three tankfuls are leached every four days. The men, however, are employed steadily.

The sulphate of iron is manufactured on the spot. For this purpose, an ordinary wooden tank about 4 feet by 4½ feet, standing outside the building in the open air, is used. The tank is kept full of water and supplied with old scrap-iron *ad libitum*, and for each charge to be precipitated, about 40 pounds of acid are added to the tank.

The precipitating-tanks, which are of wood, are protected from the action of the acids by a coating of "paraffine paint."

I append an itemized statement of the cost of handling the ore. The basis of figuring is 100 tons of ore per month of 30 days. Consumption of chemicals in the leaching department, 24 days in each month:

Roasting:		
Three men, at $2.50 per day, for 30 days	$225 00	
1¾ cords wood, at $4 25 per day, for 30 days	223.13	
54 pounds salt, at ¾ cent per day, for 30 days	12.15	— $460.28
Generator: The charge is manganese, 30 pounds; salt, 34 pounds; sulphuric acid, 35 pounds; therefore, for two generators:		
Manganese, 60 pounds per day, 24 days, at $47 per ton	33 84	
Salt, 68 pounds per day, 24 days, at $15 per ton	12 24	
Acid, 70 pounds per day, 24 days, at $60 per ton	50.40	— 96.48
Acid for settling-tanks (25 pounds), and for sulphate of iron manufacture (25 pounds), 24 days		36.00
Wages of leachers, at $5.50, for 30 days		165.00
Salary of foreman		125.00
Total		$882.76

Or, per ton of concentrates, $9.40 3-10.

* A paper read before the American Institute of Mining Engineers, Bethlehem, Pa., May, 1886, by George W. Small, E.M., Oconomowoc, Wis. We republish this paper by special request, several important alterations having been made in the figures.—ED. E. AND M. J.

PATENTS GRANTED BY THE UNITED STATES PATENT-OFFICE.

GRANTED NOVEMBER 9TH, 1886.

352,174. Volumetric Gas Regulator. Moses G. Wilder, Philadelphia, Pa.
352,184. Machine for Severing the Flanges from I-Beams. William H. Graham, Pittsburg, Pa.
352,216. Preserving Timber. Henry Aitken, Darroch, Falkirk, County of Stirling, Scotland.
352,266. Ratchet-Drill. Michael Rothfuss, Williamsport, Pa.
352,311. Machine for Raising Phosphate Rock. Daniel J. Gilchrist, Bergen Point, New Jersey.
352,316. Manufacturing White Lead. William E. Harris, New York City.
352,344. Coal Distributing Chute. Cornelius M. O'Donovan, Omaha, Neb.
352,365. Die for Making Rolled Forgings. George F. Simonds, Fitchburg, Mass.
352,367. Making Metal-Rolling Dies. George F. Simonds, Fitchburg, Mass.

PERSONALS.

Prof. Andrew S. McCreath, State Geologist of Pennsylvania, has been engaged by the Norfolk & Western Railroad Company to make a second investigation of the minerals tributary to its lines.

Joseph Henry Brown, a pioneer iron-master of the Mahoning Valley, Ohio, and one of the founders of the firm of Brown, Bonnel & Co., died on the 17th inst., at Youngstown, at the age of seventy-six years.

Major Charles W. Raymond has been transferred from New Orleans to Washington, where he takes the place of Col. John M. Wilson, as chief of engineers for the city. The person holding this office is *ex-officio* Superintendent of Public Buildings and Grounds of the District. His position also makes him the master of ceremonies at the social gatherings given by the President.

We learn that Mr. Charles A. Ashburner, of Philadelphia, has resigned his position as geologist in charge of the Pennsylvania Geological Survey, in order to devote his attention to the location and development of natural gas fields, in connection with the business of the Safety Appliance Company, Limited, of Pittsburg, Pa. This company, we believe, was formed by Mr. George Westinghouse, Jr., and is allied with the Westinghouse Electric Company. Professor Lesley, the State Geologist, announces that an arrangement has been made with Mr. Ashburner, by which he will temporarily give half his time to the Survey, in order to complete the work that he now has in hand. As our readers are aware, this is chiefly the mapping of the anthracite districts, in a manner which, showing as it does the underground contours of the coal-beds, renders the map specially valuable for practical uses. Mr. Ashburner has been connected with the Survey for over twelve years; and his labors have, as Professor Geikie once remarked, brought the science of geology nearer to the art of mining than it was ever brought before, at least, on such a scale. We are glad that he will be allowed to complete them. The familiarity which Mr. Ashburner has gained with the conditions and history of all the natural gas districts will constitute an admirable preparation for the business on which he now enters, and in which we wish him every success.

FURNACE, MILL, AND FACTORY.

The Edwards Iron Company, Woodstock, Ala., is repairing its furnace, which has been idle some time, and which will soon be put in blast.

The Water Board, Minneapolis, Minn., has awarded the contract for a pair of 300 horse-power pumping-engines for the West Side pumping station to the North Star Iron-Works of that city.

A company is about to be be organized at Chattanooga, Tenn., to operate a mammoth steel forge for making railroad castings, frogs, switches, and curves. The plant will be erected at a cost of $100,000, and will be in the vicinity of the new furnace.

The Lady Ennesley Coal and Iron Company has made a contract with J. P. Witherow, of Pittsburg, for the erection at Sheffield, Ala., of a coke blast furnace, 18 feet bosh and 75 feet high. It is to be erected the coming season.

The Gem Iron Furnace, in Page County, Va., on the Shenandoah Valley Railroad, has chilled, and it will require three months to remove its contents. The furnace chilled in August last, and operations had just been resumed when this second misfortune befell it.

The Jupiter Furnace, St. Louis, Mo., which has been idle for two years past, will be blown in as soon as some important improvements now under contract are completed. The furnace will have a daily capacity of over 200 tons. Its owners have just made a contract for 23,000 tons of Bessemer ore.

The St. Louis Wire Company, St. Louis, Mo., proposes to remove its entire plant to Pennsylvania, and is looking for a location in the neighborhood of Braddock. It has a steel plant at Braddock, and proposes to erect a blast-furnace with a daily capacity of 150 tons, and a wire-works at the same place.

One of the new regenerative furnaces at the Ninth Ward Gas-Works, Philadelphia, Pa., was charged for the first time on the 12th inst. The special merit claimed for the new system is intense heat and perfect combustion of coal. It is claimed that by this system gas can be put in the holder at a cost of 35 cents a thousand feet.

The Dickson Manufacturing Company, Scranton, Pa., at the Wilkes-Barre works, are constructing a 320 horse-power engine for the Meike Imperial Colliery Company, at Yokohama, Japan. The bed-plates are over 20 feet long, the cylinder beam is 20 inches with a stroke of 48 inches. A pair of eight-foot conical drums are also making for this same company, and they will be shipped in about two weeks.

The Chrome Steel-Works, of Brooklyn, N. Y., have concluded to substitute gas for coal in their heating-furnaces. It will be necessary to tear out their old furnaces and put in regenerators in their stead. The new plant will be complete in every respect, even to apparatus for the manufacture of the necessary gas, which will be made on the premises. This improvement will increase the productive capacity of the works twofold.

BIDS ON CONTRACTS.

BRIDGE.—The contract for constructing an iron railroad bridge over the Missouri River, at Randolph Bluffs, Mo., near Kansas City, has been awarded to the Keystone Bridge Company, of Pittsburg, and M. Lassig, of Chicago, at $700,000.

OIL.—The Treasury Department, Washington, D. C., has awarded contracts for supplying oil for the use of the light-house service as follows: For mineral oil, to the New York Refining Company at 6·35 cents a gallon; for lard oil, to be delivered at the depot on Staten Island, to Armour & Co., of Chicago, at 50 cents a gallon; for lard oil, to be delivered at San Francisco, to Yates & Co., of San Francisco, at 54 cents a gallon. These prices are much lower than formerly paid.

IRON WORK.—The following bids for furnishing iron work for State Capitol Building were received by Mr. George Ropes, Topeka, Kansas, November 3d: Ætna Iron-Works, Chicago, $19,250; Seaton & Lea, Atchison, $17,387; Henry Bennett, Topeka, $17,238; Snead & Co., Louisville, $16.887; Haugh, Ketchum & Co., Indianapolis, $16,757; Missouri Valley Bridge and Iron-Works, Leavenworth, $16.359; Dearborn Foundry Company, Chicago, $15,979; P. E. Lane, Chicago, $15,666 (bid accepted).

LABOR AND WAGES.

The strike of the miners at Louisville, Colo., to which we referred in our last issue, has been settled.

The strike of the puddlers of the Columbia Rolling-Mill, at Lancaster, Pa., for $3.85, begun nearly four months ago, has resulted in the strikers accepting $3.75. Work will be resumed in all departments.

The Connellsville coke syndicate and independent operators met at Pittsburg, Pa., on the 18th inst., to discuss the settlement of existing differences with their men. It was practically decided to grant the demands of the miners.

COAL TRADE NOTES.

ALABAMA.

The Coalburg Coal and Coke Company is about to erect 150 additional coke-ovens at Coalburg.

COLORADO.

A vein of coal, said to be nine feet thick, has been discovered seven miles east of Fort Collins, Larimer County, at a depth of 150 feet.

ILLINOIS.

A vein of coal was struck at Mount Vernon on the 19th inst.

INDIANA.

The affairs of the Brazil District are in good shape. Considerable activity has been manifested during the past month in the development of new mines, principally on the line of the Vandalia's south branch extension to Saline City. Several hundred acres of land just west of Brazil on the coal branch of the Chicago & Eastern Railroad have also been recently leased, and a shaft will be sunk soon.

PENNSYLVANIA.

ANTHRACITE.

A large force of miners is at work prospecting for coal veins on the Northumberland Coal Company's tract north of Mount Carmel. One or two valuable seams have already been cut, and if the veins turn out as expected, two or three mines will be opened next spring.

The Erie breaker, operated by the Hillside Coal and Iron Company near Carbondale, was totally destroyed by fire on the 16th inst. The loss will amount, it is stated, to about $100,000. The breaker had been in operation for sixteen years, and had a daily capacity of 700 tons.

BITUMINOUS.

The fire in the Venture coal mine, owned by Gray & Bell, in Banksville, has at last been extinguished. It broke out last December, and every plan known was taken to put it out. It is estimated that the mine has been damaged to the extent of $25,000. It will be cleaned up and started in about three weeks.

The Guffey Coal-Works at Webster, on the Monongahela River, have been purchased by Thomas Fawcett & Son, who have also purchased 240 acres additional coal lands adjacent.

GAS AND OIL NOTES.

Exports of refined, crude, and naphtha from the following ports, from January 1st to November 13th:

	1886. Gallons.	1885. Gallons.
From Boston	5,130,682	7,654,385
Philadelphia	132,257,683	133,403,992
Baltimore	13,778,216	10,307,494
Perth Amboy	5,250,603	....
New York	343,421,516	327,780,173
Total exports	499,838,700	479,146,044

The Chief of the Bureau of Statistics reports the total values of the exports of mineral oils from the United States for the month of October, 1886, and during the ten months ended October 31st, 1886, as compared with similar exports during the corresponding periods of the preceding year, as follows: October, 1886, $3, 91,411; October, 1885, $4,491,054; ten months ended October 31st, 1886, $39,437,624; ten months ended October 31st, 1885, $41,613.902. These exports comprise about 99 per cent of the total exports in mineral oils.

DAKOTA.

It is stated that the territorial government of Dakota has leased 4000 acres of land in the southern part of the territory for the term of twenty years to a syndicate of capitalists, which proposes to develop the oil resources of that section.

MISSOURI.

While sinking a well, last week, near Richmond, a flow of good petroleum was struck at a depth of 125 feet. A company will be formed and the well sunk 1000 feet.

GENERAL MINING NEWS.

ARIZONA.

PINAL COUNTY.

MAMMOTH.—The mill is running thirty stamps night and day with satisfactory results. At the mine, the prospects are favorable for supplying the mill with ore for a long time to come, and it is probable that the capacity of the mill will be increased by the addition of ninety stamps.

YUMA COUNTY.

HARRIS.—By December, the ten-stamp mill of this company will be completed and the crushing of ore will begin.

ORO.—The company's mill at Harrisburg is in successful operation. The mill has five stamps, and it is expected that five additional stamps will be put in soon.

CALIFORNIA.

AMADOR COUNTY.

PLYMOUTH CONSOLIDATED.—We have been officially advised that the mine is looking well in all its different divisions. The new 1500 level (No. 6) is widening, with an improvement in the quality of the rock. It looks better than any previous period. There is abundance of water, and every thing is running in perfect order.

MARIPOSA COUNTY.

HALL.—The hoisting-works, machinery, the mill, and boarding-house belonging to this mine, in the mountains above Mariposa, were burned on the 2d inst. The mill and hoisting machinery were new.

MONO COUNTY.

HOMER DISTRICT CONSOLIDATED GOLD MINES, LIMITED.—This company has been organized in London, with a capital of £1,000,000, divided into 160,000 preference shares of £1 each, and 168,000 deferred shares of £5 each. Purchase price, £58,333

in fully paid preference shares, and £86,667 in cash and 152,000 deferred shares. There are 23 gold mines adjoining each other and abundant water rights. The mines are on a good wagon road to the Central Pacific Railroad at Carson. They cover the greater part of Prospect Mountain, embrace over 5½ miles in length, by 600 feet in width, on the course of the lodes, and comprise more than three fourths of the mines of the Homer Mining District. The mines included in this consolidation are as follows: Bay Queen, Goodwin, God Haux, Ontario, West May Lundy, Bryant, Lucky Morton, Conquest, Mountain Brow, Lake View, Jackson, Erie, Mountain Brow No. 2, May Lundy, Nettee, Tip Top, Summit, Ontario No. 2, Jim Fiske, Mocking Bird, Daisy, Niomita, Josie Mansfield. They have been examined and reported upon by "Mr. William Irwin, M.E., late Superintendent of the Standard mine; Capt. Bickford Antony, Mining Engineer of Cornwall; Mr. G. W. Bevans, of San Francisco; Mr. J. Murphy, for fifteen years employed by Messrs. Mackey & Fair as mining engineer at the Comstock mines; Mr. John I. Ginn, of California; Capt. J. H. Moyle, M.E.; and they have also been reported upon by the Hon. H. C. Burchard, Director of the United States Mint, who makes numerous references to them in his official reports." The idea of basing an investment of $5,000,000 on Dr. Burchard's report of the U. S. Mint, is the limit of absurdity to any one who has ever seen that precious document. None of the mines has made any mark here, and we have grave doubts of the entire outfit being worth 60 per cent of the amount asked for it. Nor do the names of some of the experts mentioned increase our faith in it. Can not some of our readers who know the property give the "bottom facts"?

BODIE DISTRICT.

Report for the week ended November 7th:

BODIE.—Twenty-five tons of ore are crushed daily.

BULWER.—There were shipped to the mill 350 tons of ore; average pulp-assay, $31.15; and to San Francisco on the 1st instant, $16,520.88.

MONO.—Good ore is taken out below the 700 level track.

STANDARD.—The ore stopes and drifts look very well. There were shipped to the mill, 296 tons of ore. The mills are running steadily on ore and tailings.

NEVADA AND PLACER COUNTIES.

SOUTH YUBA WATER AND MINING COMPANY.—We have been advised that a recent inspection by the officers of the company shows the works to be in excellent condition. But few repairs will be needed this fall. All the construction was done in the best manner, and the company's canals, flumes, reservoirs, etc., are in good order. The company is now selling no water for hydraulic uses, the demand being entirely for power, irrigation, domestic and municipal purposes, etc. For these objects, the business is gradually increasing, and this year the company will net over fifty thousand dollars profit. Many propositions are made to supply the fruit-growers and farmers with water for irrigation. Also, the quartz mining interest is in a highly prosperous condition, which necessitates the use of a large amount of water for power. The outlook for the company is better than for several years, and the demand for water for every use is certain to increase.

COLORADO.

CLEAR CREEK COUNTY.

FREELAND.—We are officially informed that the production for October was: Gold, $18,778.18; silver, $3721.58; copper, $56.05; total, $22,555.81.

PLUTUS.—Official advices show the production for October: Gold, $3330.70; silver, $2624.84; copper, $100.41; total, $6055.95.

GUNNISON COUNTY.

UNITED STATES GOLD PLACER COMPANY, LIMITED.—This company owns the placers known as the Cottonwood placers, which lie on the Rio San Miguel, near the mouth of Cottonwood Creek, about forty miles from Montrose. The bars are the lowest drift of the San Juan gold belt. The property consists of 800 acres. The water front of these claims is about five miles. During the winter, all the earth-work for fluming will be done, and early in the spring the flumes will be constructed and the hydraulics set. A large portion of the lumber has already been cut. About $50,000 have already been expended.

LAKE COUNTY.

From the Leadville *Herald-Democrat*, we condense the following:

ARKANSAS VALLEY.—It is probable that, during the ensuing year, a long tunnel will be built to connect the furnaces of these smelting-works at Leadville with a stack to be erected on the hill, and thus an additional saving in lost fumes be effected.

BREECE.—The daily iron ore-shipments from this mine to the Colorado Coal and Iron Company's works at Pueblo have been increased from fifty to seventy tons a day.

CHRYSOLITE.—We have been officially advised that the production for October was 11,036 ounces of silver.

IRON SILVER.—The concentrating mill of this company has closed down on account of the scarcity of water. The mill had been running from the first of August, since which time its earnings were equal to about one half of the cost of the structure and its equipments. During the ensuing winter, slimers and other improvements will be made, increasing both the efficiency and capacity of the mill. It is expected to start it up again about the middle of next April. The Robinson shaft of the Iron Silver Company has attained a depth of 277 feet, being the depth of the third level in the Stone mine.

LEADVILLE CONSOLIDATED.—Manager Harrison settled for two lots of ore on the 11th inst., which netted the company $9932. One lot returned $120 a ton above smelting charges, and the other $114 a ton.

LA PLATA.—Since the reorganization of this company in England, the management at Leadville has already received $100,000 with which to carry on the smelting business and increase the purchases of ore.

LEE BASIN.—This company, which is working its own and the Denver City Company's properties, is meeting with success. Drifting from the Wright shaft, the Lee Basin lately disclosed ore in three distinct headings, showing an apparent chute making for the Shamus O'Brien shaft, also situated on the Lee Basin ground. During the past week, there were shipped from the mine twenty-six tons of ore, which netted above smelting charges $232 a ton. The bulk of the product of the mine is, however, not of this grade.

MORNING STAR.—This property has again resumed a large daily production. A number of improvements have been made in the McHarg shaft, which will facilitate the more rapid and economical extraction of the ore. A contract has been let to the Holden Company, of Denver, for its silver-lead ore production for the next three months. The contract is subject to three car-loads a week that had previously been contracted for to the Tomichi smelter until January 1st.

ROBERT E. LEE.—The shaft is down 420 feet, and is still in porphyry.

ST. KEVIN.—This concentrating mill started up for a practical run on the 13th inst. The mill is provided with a great quantity of suitable concentrating stuff. The mine is reported looking well, and producing considerable ore. Development-work has been advanced steadily and with good results. The main shaft is now down 280 feet, and a contract is to be let for fifty feet more.

TIP TOP.—This property, on East Fryer Hill, on which work was begun about a year ago, and ore struck in June last, has since then and up to the end of October produced about 4600 tons of ore of a value of $124,000. The developments of the mine at present, with one exception, do not extend beyond one hundred feet from the shaft, so that necessarily only a very small portion of the property has been opened. The mine is said to be one of the richest in the district, and well equipped with machinery for more extensive work. It is owned by Messrs. Taussig and others of St. Louis.

WALCOTT.—Work will probably be resumed. The southern portion of the company's territory adjoins the Henriett and Morning Star properties, and is full of promise.

SUMMIT COUNTY.

SILVER WAVE.—This company has been organized in Pittsburg, with a capital stock of $500,000. The lode that the company has already been operating for some time is situated near Montezuma, and is regarded as a valuable piece of mining property. The ore is shipped by rail to Denver. The Board of Directors of the new organization consists of William M. McKelvy, Charles Lockhart, A. M. Brown, W. R. Thompson, R. H. Boggs, George Crawford, and J. Erastus McKelvy.

DAKOTA.

LAWRENCE COUNTY.

AMERICAN TIN MINING COMPANY.—The main shaft is down to a depth of 117 feet. The hoisting-works have been shipped from the East. We gratefully acknowledge the Deadwood *Pioneer's* correction. The company's property is situated in Lawrence instead of Pennington County, as stated by us.

CALEDONIA.—The superintendent reports on the 8th inst. that the ore produced from the 300-foot level was 441 tons, and from the 200-foot level 1193 tons, or a total of 1574 tons. The bullion far the last half of October was 720 ounces, or about $11,876.64.

IRON HILL.—The monthly dividend has been passed, as the profits for October above operating expenses have been too small. The ore milled has been of low grade, and the month's yield, as a natural consequence, was far below the average. Every thing is looking well at the mine and mill, and the smelter is working satisfactorily. We have been officially advised that the production for October was $25,583.

RICHMOND.—The mill is crushing Richmond-Sitting Bull ore.

PENNINGTON COUNTY.

Arrangements are making for the location of a thirty-ton smelter at Rapid City.

HARNEY PEAK.—The recent visit of Mr. James E. Wilson, of New York, one of the principal members of this company, and Captain Gilbert, of England, has not been barren of important results. The company has now perfected arrangements for the construction of a commodious boarding-house and other buildings. In addition to the sinking upon the mine, a tunnel is running, and it is now more than probable that a largely increased force will be employed soon.

GEORGIA.

PICKENS COUNTY.

GEORGIA MARBLE COMPANY.—The architect and some of the leading stockholders interested in the new hotel and opera-house to be built at Chicago, at a cost of over $2,000,000, next spring, have visited the quarries of this company, and have given an unanimous recommendation of this marble for the projected building.

IDAHO.

GOLD HILL.—This mine at Quartzburg, Boise County, has been sold to San Francisco parties for $150,000. The purchasing parties also pay for all supplies on hand and the expenses on the new mill since the fire, which will probably be $30,000 more.

IDAHO CONSOLIDATED DITCH AND CANAL COMPANY.—This company has been organized at Portland, Oregon, with a capital stock of $1,000,000, by J. McCracken, A. T. Cunningham, and F. S. Brandegee The ditches will run from the Boise River, in Ada County, Idaho, to the junction of the Boise and Snake rivers, and from another point on the Boise River to the same termination, and will supply water for irrigating, mining, and manufacturing purposes, in this territory.

MINNIE MOORE.—During October, this mine is reported to have yielded (and shipped) 1062 tons of ore, which sold for $136,683.19.

MICHIGAN.

COPPER MINES.

CALUMET & HECLA.—Shaft-houses and hoisting-machinery are to be put up at the southern or Black Hills part of the mine. This part of the mine yields, it is said, only about 2½ per cent of mineral; therefore an increase of stamping facilities is imperative in order to maintain the product at its present rate.

HURON.—There is a movement afoot that may lift the Huron from the financial slough. It proposes to double its stamping capacity and relieve its burden of debt.

IRON MINES.

The following statement, given by the Marquette *Mining Journal*, shows the amount of iron ore shipped from the ports of the districts given below, for the season of 1886, up to and including Wednesday, November 10th:

	Tons.
Marquette—Marquette District	817,428
St. Ignace— " "	71,020
Escanaba— " "	618,522
Menominee District	828,531
Grand total of lake shipments	2,335,501

Shipments of Pig-Iron.

Pioneer furnace	5,815
Deer Lake furnace	1,705
Vulcan furnace	13,857
	21,377

The gain over the shipments from the above ports, during the same period in 1885, is 320,223 gross tons.

EMMET.—The first shipment of ore, consisting of

fourteen car-loads, from this company's Hamilton shaft, has been made, and shipments continue regularly. The shaft is reported to be down 40 feet in ore, and a drill-hole at the bottom of the shaft has penetrated the vein to a depth of 200 feet farther without yet encountering the foot-wall. Three analyses of the ore show it to be very low in phosphorus, the highest sample going ·03.

MINNESOTA.

ST. LOUIS COUNTY.

MINNESOTA IRON COMPANY.—During the season of 1886, including the week ended November 10th, there were shipped from Two Harbors 300,954 tons of ore from this company's mines.

MISSOURI.

JASPER COUNTY.

The mines at Short Creek, which have been producing well all summer, will soon receive a fresh impetus by the starting up of some heavy pumping machinery in the valley north of Joplin. The draining of this locality will, it is thought, reopen a rich field and add largely to the output of ore in that camp.

MONTANA.

LEWIS & CLARKE COUNTY.

BOSTON & MONTANA.—Stockholders are requested to deposit their stock with J. & W. Seligman, New York, who will pay therefor, on or before March 1st, 1887, the par value of $10 a share. The reason given is the inability to make a market at Boston, and the wish to place the stock in London. Holders of 200,000 out of the total of 250,000 shares have assented.

EMPIRE.—During October, the ten-stamp mill ran twenty-seven days, crushed 437 tons of ore, yielding $14,500, or an average saving of over $33 a ton. The mine shows material improvement, particularly in the tunnel level and in the 500-foot levels, both east and west.

MONTANA, LIMITED.—During October, there were crushed 3130 tons of ore, yielding $137,400. The working expenses for the month were $41,000. Extra expenditure for the month on works in progress of construction, quicksilver, cordwood, stores, etc., $49,000. At the mine every thing is satisfactory, and the new developments are giving evidence of permanence and value. The work of sinking below the 500-foot level was re-commenced on September 27th, and it is expected that the 600-foot level will be soon reached.

SILVER BOW COUNTY.

LEXINGTON.—Official advices to us show that the production for October was: Silver, $60,750; gold, $7025; total, $67,775.

MOULTON.—Official advices to us show the production for October to have been: Gold, $2578; silver, $56,053; total, $58,631.

NEVADA.

EUREKA COUNTY.

EMPRESS, LIMITED.—This company has been organized in London, with a capital stock of £100,000, shares £1 each, to acquire and consolidate under one management six separate mining properties known as El Dorado, Industry, Lemon, Piute, Summit mines, and the Eureka Tunnel. All are situate at Prospect Mountain. Under individual ownership, and working from the surface only, the first-named five mines are said to have shown well in the market as bullion producers; while the Eureka Tunnel, which runs beneath and near them, for a distance of some 2000 feet, has yielded over £33,000 sterling. By making connections between the Eureka Tunnel and the five mines above it, and placing the whole under one management, it is evident that not only will the cost of working be reduced, but the output of ore be greatly increased. J. D. Power, mining engineer, of Nevada: "It is one of the most desirable mining properties in the State of Nevada." And George Attwood, London engineer: "I have no hesitation in pronouncing the property to be of great commercial value." The venders have agreed to sell the whole of the properties for the sum of £70,000, of which amount they will take £33,300 in fully paid shares.

ORMSBY COUNTY.

The Mint at Carson has started up in all the departments except that of coiner.

STOREY COUNTY—COMSTOCK LODE.

The Virginia City *Chronicle* reports the following:

ALPHA.—A few top-men are engaged in clearing away the *débris* in the vicinity of the old shaft through which the early explorations in this mine were conducted. The shaft is located in Gold Hill, near the Imperial. A hoisting-engine will be set up and the shaft cleaned out to admit of the exploration of the upper levels.

BULLION.—The company has decided to reopen the upper workings of the mine down to the 600 level through the old shaft at the foot of the ravine.

CHOLLAR.—Operations were resumed on the 1st inst., through the main tunnel that cuts the vein 250 feet below the surface croppings. Only a small force of miners is employed, as there are no facilities for crushing ore. The levels below the 250 will be reopened through the old shaft.

CONSOLIDATED CALIFORNIA & VIRGINIA.—The official report of the superintendent for the week ended the 6th inst. shows that the drift on the 1435 level, running south from the north end of the mine, has cut into good milling ore, which is without doubt the downward extension of the ore development on the 1400 level. The 1300 and 1400 levels continue to yield good milling ore. On the 1650 level, good milling ore was struck in a drift running easterly from the old stopes at a point directly under the ore development on the 1400 level. During the past week, 939 tons were shipped to the Morgan mill, and 1704 tons to the Eureka mill. The average value of the ore milled during the same period, according to the assays from the battery samples, was $28.85 for that milled at the Morgan mill and $37.09 for that crushed at the Eureka mill, and bullion valued at $76,544.33 was shipped to San Francisco. On the 8th inst., bullion valued at $32,000 was shipped.

JUSTICE.—The south drift on the 350 level has been reopened up to the old ore-breasts. There is a belt of low-grade quartz of considerable extent at this point in the mine.

OPHIR.—A station is opening up on the 1200 level in the Ophir shaft, preparatory to sending out a drift to the north end in Consolidated California & Virginia. The extension of this drift and the one on the 1065 level will demonstrate whether the ore-deposit extends upward to and above those levels.

WASHOE COUNTY.

RENO SMELTING-MILL AND REDUCTION-WORKS.—These works will be ready for operation by December. They are about one mile from Reno, on the Truckee River. They consist of a complete ten-stamp mill, with the largest-sized Howell chloridizing-furnace, and a complete thirty-ton capacity water-jacket lead smelter. The reducing capacity in the fire department will be about fifty tons of ore a day; with the power to run more than double the amount of machinery when they start up. The company has already received several car-loads of ore from various parts of the country. The following are the prices it has been paying for ores, and is now offering: For base milling ores, 90 per cent of the assay value of the gold and silver, on ores up to 300 ounces per ton value; 300 to 500 ounces, 93 per cent; 500 ounces and upward, 95 per cent; $14 per ton is charged for milling. For lead smelting ores, it pays 90 per cent of the silver, gold, and lead on ores carrying up to 55 per cent lead, and charges $14 a ton for smelting. On lead ores carrying over 55 per cent lead, it gives the same percentage of lead, gold, and silver, and charges but $10 a ton for working. All ores sampled and paid for as soon as received, and sacks returned to the shipper. Railroad freight from Independence, Inyo County, Cal., on ores of $100 value a ton is about $6.38 a ton to Reno in car-load lots. The Central Pacific Railroad Company charges $2.50 a car-load for switching the cars to the dumps.

NEW JERSEY.

MORRIS COUNTY.

ANDOVER IRON COMPANY.—This company's mine at Hibernia, three miles from Rockaway, and one of the largest in that vicinity, which has not produced any ore since last Jannary, has started up.

WARREN COUNTY.

Marble Hill, two miles from Phillipsburg, has been purchased by a company of Philadelphia capitalists, which has a capital stock of $500,000, from Henry Fulmer, of Easton, and a large force has been put at work. The character of the ore is a red oxide, analyzing in metallic iron from 55 to 70 per cent. The ore is of the Bessemer quality and shows up in true vein form. A monster engine will be erected at the mine, and larger machinery to increase the output to 4000 tons a month is constructing. The mine is near the Pennsylvania Railroad.

NEW MEXICO.

SIERRA COUNTY.

LADY FRANKLIN MINING COMPANY, LIMITED.—This company has been organized in London, with a capital of £200,000, shares £1 each, for the purpose of acquiring and working the gold and silver mines situated near Kingston. The Lady Franklin property is freehold, and consists of nine acres. Seven ninths of the D. Webster mine, and a portion of the Dansby mine, comprising one acre, both of which adjoin the Lady Franklin mine, are included in the purchase. The work of developing the property was begun in November, 1884, and has been continuously carried on since with very favorable results. The company takes over the property as from May 1st, 1886, as a going concern, since which date all profits derived from the working of the mine belong to the company. Reports on the property have been made by Mr. James Bennallack, of Grass Valley, California, and Mr. B. R. Taylor, of Kingston, New Mexico. The purchase money for the property, including the plant, stores, and ore on dumps, is £170,000, payable as to one third in fully paid shares, and the rest in cash.

NORTH CAROLINA.

DAVIDSON COUNTY.

PIEDMONT REDUCTION COMPANY.—This company has been organized with a capital stock of $100,000, shares $10 each, for the purpose of erecting and operating smelting-works at Silver Valley, near Thomasville. The Silver Valley Mining Company has contracted to supply the works with its whole product up to 25 tons of ore daily. The practical direction of the work will be undertaken by Messrs. C. F. Croselmire & Co., of Newark, New Jersey.

HAYWOOD COUNTY.

KEYSTONE MICA COMPANY.—This company, in Pennsylvania, is working the mica mine near Waynesville, and is now ready to furnish mica to the trade.

MCDOWELL COUNTY.

MARION BULLION COMPANY.—This company, which is carrying on operations on a large scale, and has already found a number of gems, may probably at an early day begin the manufacture of jewelry exclusively from North Carolina gold, set with North Carolina gems.

MONTGOMERY COUNTY.

APPALACHIAN COMPANY, LIMITED.—A contract has been made with the Excelsior Iron-Works, of Chicago, for the erection of a complete forty-stamp gold mill, California pattern, with Duncan concentrators. This is the property that has been known as the Coggins mine. We referred to the organization of this company in our issue of September 4th.

RANDOLPH COUNTY.

NEW HOOVER HILL.—The results of milling for October were 770 tons of ore crushed, producing 104 ounces of gold of the approximate value of $1725.

ROWAN COUNTY.

GOLD HILL.—The superintendent writes to the directors of the company, that he should advise the shutting down of the mill until the ore in the Randolph winze can be got at by a level driven below it, as the expense of working the winze is much too great; the shaft should be sunk and levels driven on both sides, so as to open up the ground for overhand stoping. The north shaft is sinking, and some ore that pans a little free gold from a small vein has been taken out; but as this vein is at present only a few inches wider, I can say nothing about it at present. The hoister for the Randolph has arrived, and will be in working order soon. I have retained the old hoist in its place in case of accidents; besides, a new rope will enable us to work the Randolph and center shafts simultaneously, should the necessity arise. The tramway from the center and the north shafts to the mill is finished.

PENNSYLVANIA.

PHILADELPHIA & READING COAL AND IRON COMPANY.—The Philadelphia & Reading Railroad Company has arranged to receive propositions from manufacturers of iron for the lease of the 106 furnaces in the Schuylkill Valley owned by the company. Of this number, thirty-seven are out of blast and have been so for years. Two of these furnaces will be taken possession of by capitalists at an early day, and very soon thereafter, it is hoped, the others will be taken up and put in operation. In addition, the officials are understood to be perfecting arrangements for leasing their iron ore properties, amounting in all to 21,000 acres, and located in the Cumberland Valley, Pa., in

Virginia, and in the Putnam Valley, near West Point, New York. They also expect to save $250,000 a year by a change in the methods of handling coal, particularly at tide-water shipping points. It is also stated that the new management is considering the question of leasing the collieries.

NORTHAMPTON COUNTY.

NORTH BANGOR SLATE MINING AND MANUFACTURING COMPANY.—On the 17th inst., a seizure was made of the property of this company, at Bangor, consisting of nearly 400,000 sawed slates, 20,000 feet of flagging, engines, steam-pumps, etc., to satisfy a claim held by the First National Bank of Bangor, to pay $4000 in wages due to workmen, and royalty on the land.

SOUTH AMERICA.

VENEZUELA.

The Venezuelan government has established a mint at Caracas, and begun to coin the product of the gold mines of the country. A decree issued by President Blanco declares that foreign money will hereafter be regarded as merchandise, and will be received at the Venezuelan market rate. Officers of the government are forbidden to receive any other than Venezuelan money and foreign gold coins comprehended in the tariffs of March 7th, 1879, and July 6th, 1880. The importation of all foreign silver money is prohibited. The day after the issue of the decree, the officers of the mint offered to purchase, during the next eight days, foreign silver coin at the rate of 80 cents for each United States dollar. The Consul at La Guayra states that the efforts to increase their silver bullion by depreciating the silver coins of the United States and European countries twenty cents on the dollar must fail, and consequently they will be exported.

UTAH.

JUAB COUNTY.

MAMMOTH.—This company, at Tintic, is turning out on an average fifteen tons a day of gold, silver, and copper ore, assaying a trifle over $50 a ton. All the output goes to Argo, Colo., where the ore brings a better price than at Salt Lake City. A connection had been made between the 200 and 300-foot levels. The stock is quoted at about 65 cents.

SUMMIT COUNTY.

ANCHOR.—After about three months' inactivity, work was resumed. It is expected that the mine will be drained by the end of the year.

PARLEY'S PARK.—There are prospects of a resumption of operations at this mine, which has been idle for several years. Mr. J. G. Kennedy, the old superintendent, has lately arrived from New York for inspection of the property The shaft was found in a dry and first-class condition, considering every thing. It is thought the mine is drained by the Ontario. If the report to be made is favorable, work will begin soon.

TOOELE COUNTY.

Mr. F. J. P. Pascoe has disposed of all his mining interests, including the old Waterman smelting plant at Stockton, to Colonel M. Shaughnessy, who will push development on the mines and probably put the smelter in operation.

VIRGINIA.

PULASKI COUNTY.

The Foster Falls property, twenty-one hundred acres of mineral land, was sold on the 18th inst. to a Philadelphia syndicate for $150,000, one third cash. Large iron furnaces will be erected on the property at once.

WISCONSIN.

UNITED IRON AND LAND SYNDICATE.—This company, to which we referred in our issue of October 30th, owns 15,000 acres of mineral and timber lands in Ashland County: twenty-two "forties" on the Gogebic Iron Range, adjoining the property of the Gobebec Iron Syndicate. The officers elected are: J. L. Gates, Neillsville, President; H. S. Benjamin, Milwaukee, Vice-President; W. J. Turner, Milwaukee, Secretary; Rudolph Nunnemacher, Milwaukee, Treasurer. The directors are: Avery Crounse, Hurley; N. D. Moore, Hurley; H. S. Benjamin, Milwaukee; F. A. Bates, Cleveland; C. P. Newbury, Chicago; H. P. Hussey, Cleveland; W. J. Turner, Milwaukee; E. P. Sheldon, Chicago; J. L. Gates, Neillsville.

WYOMING.

The French company that is operating in the gold fields of Atlantic and Miners' Delight has completed both the great ditches that have been in course of construction for the past year. The work of gold washing by the hydraulic process will be actively begun as soon as the spring of 1887 opens. The company has expended a large amount of money in this enterprise.

BULLION PRODUCTION FOR 1886—SPECIAL OFFICIAL REPORTS.

MINES.	States.	Month of October.	Year from Jan. 1st, 1886.
		$	$
Alice, G. S	Mont.	.....	771,243
Belmont	Nev.	——	3,255
Boston & Montana, G.	Mont.	.....	417,137
Caledonia, G.	Dak.	——	118,112
Christy, S.	Utah.	.....	210,76±
Chrysolite, S.	Colo.	**14,236	187,578
Colorado Central, S.	Colo.	21,426	226,211
Daly, S.	Utah.	.....	490,179
Deadwood-Terra, G.	Dak.	46,291	507,334
Derbec Blue Grav., G. S.	Cal.	.. ....	136,718
Elkhorn, G. S.	Mont.	.....	164,848
Eureka, S. L.	Nev.	——	147,559
Father de Smet, G.	Dak.	——	61,376
Freeland, G. S. C	Colo.	22,556	254,516
German Consolidated, G.	Colo.	.....	53,673
Granite Mountain, S.	Mont.	109,900	1,190,800
Head Center Cons., S.	Ariz.	——	4,633
Head Center & Tranq., S.	Ariz.	——	25,818
Hecla, G. S. L. C	Mont.	.... ..	251,303
Helena, G. S. L. C.	Mont.	... .	240,?34
Holmes, S	Nev.	——	403,521
Homestake, G.	Dak.	78,863	896,053
Hope, S.	Mont.	.....	102,456
Independence, S.	Nev.	——	15,000
Iron Hill, S.	Dak.	**25,283	359,142
Iron Silver, S. G.	Colo.	——	516,319
J. D. Reymert, S.	Ariz.	2,014	4,416
Kentuck, S.	Nev.	639	83,346
Lexington, G. S	Mont.	67,775	730,826
Montana Limited, G. S.	Mont.	137,400	1,333,700
Moulton, G. S.	Mont.	58,631	632,393
Navajo, G. S.	Nev.	... ...	138 944
New Pittsburg, S	Colo.	1,100	6,330
North Belle Isle, G. S.	Nev.	.....	20,285
Ontario, S.	Utah.	——	1,143,238
Plymouth Consolidated, G.	Cal.	56,514	504,061
Plutus, G. L. C	Colo.	6,056	134,404
Ropes, G. S.	Mich.	3,403	32,638
Standard Consolidated, G.	Cal.	19,297	177 212
Tombstone, G. S. L.	Ariz.	——	†**423,307
Total		.....	$13,035,626

G., gold; S., silver; L., lead; C., copper; M., mica. Silver valued by the different companies from $1@$1.29 per ounce; gold, $20.67. †Not including value of lead and copper. ** Silver valued at $1.29. * Royalty. ‡ Net. § Ore sales. ‖ Not official. —— No shipments during month mentioned.

MARKETS.

NEW YORK, Friday Evening, Nov. 19.

Silver.

DATE.	London. Pence.	N. Y. Cents.	DATE.	London. Pence.	N. Y. Cents.
Nov. 13..	46 11-16	101¼	Nov. 17	46⅞	101¾
15..	46¾	101⅛	18	46 15-16	101⅞
16..	46⅞	101¾	19	46 15 16	102

The advance has been in a measure stimulated by the demand by the French government for refined bars for coinage for Tonquin.

The recent decline in silver to nearly 42d. is looked upon in the best-informed quarters as having been due in great measure to artificial causes, principally some unusual conditions imposed by the Manchester merchants; but this cause of decline appears to have expended itself and the price has recovered, it is to be hoped to remain up at least as high as at present. The impression continues that our government will continue its purchases of silver, and it is hoped that some basis of accord may be arrived at by foreign governments, looking to the establishment of some standard ratio between gold and silver. This impression is quite shadowy, but it nevertheless has exerted a strengthening effect on the silver market.

Foreign Bank Statements.—The governors of the Bank of England, at their regular weekly meeting, made no change in the bank's minimum rate of discount, and it remains at 4 per cent. During the week, the bank gained £102,000 bullion; and the proportion of its reserve to its liabilities was raised from 40 5-16 to 42 7-16 per cent, against 44⅞ per cent at the same time last year. On the 18th inst., the bank gained £59,000 bullion on balance. The weekly statement of the Bank of France shows a loss of 1,850,000 francs gold and a gain of 4,575,000 francs silver. The weekly statement of the Imperial Bank of Germany shows a specie gain of 6,460,000 marks.

Copper.—This market is quiet but strong, and we quote it at 12@12⅛c. for Lake and 10½@11c. for Orford and Baltimore. No important sales have been made by the Lake companies, and their tone is somewhat more moderate this week. It is possible that no large sale will be made for the present, but manufacturers will be kept supplied with small lots at probably 12c. until the close of navigation.

There is no sign of Anaconda starting up; indeed, its proprietor has telegraphed in answer to an inquiry for furnace material by one of the refiners, that "the mine is closed for an indefinite time."

It appears to be recognized that prices are now near the "border-land." If advanced much, they would probably lead to the prompt reopening of some of the Western mines, and it may be deemed expedient to keep them near their present point to prevent a step that could not fail to put them down again to an unprofitable point.

Chili Bars are quoted in London to-day £40 15s. The price has varied but little during the week. Best Selected is quoted £45 10s.

Messrs. Henry Bath & Son report, under date of November 1st, as follows:

Our smelters continue firm and show little disposition to meet lower prices, while consumers are holding back in the hope of buying more cheaply should the rumors of the Anaconda resuming work prove correct. Cnili Bars have so far borne the brunt of the fall, which in their case would appear to be pretty well discounted already.

Deliveries for the fortnight have been 3009 tons, against imports 3493 tons, showing an increase of 484 tons in stocks. The total visible supply shows 63,113 tons, against 63,111, and not 62,485 tons, as given last fortnight, and 64,893 tons October 1st, our afloat figures having then been underestimated. American imports, among which we notice two lots of Anaconda matte, have been 319 tons into England and 200 tons into France; total, 519 tons, against 2082 tons last year.

In furnace material, the only transactions reported are about 650 tons of African rich ore at 8s. per unit, and about 270 tons precipitate at from 8s. 1½d. @8s. 6d. per unit.

	Imp'ts.	Deliv's.	Stocks.	Afloat, chart'd.
Chili at L'pool, Swansea, and France	1,484	741	43,095	7,868
Foreign copper in London, chiefly Australian	628	861	7,262	750
American copper at Liverpool	319	122	1,716	....
Other copper—Liverpool and Swansea	712	935	2,027	....
American copper in France	200	210	195	....
Other copper in France	150	140	200	....
Tons fine copper during the fortnight	3,493	3,009	54.495	8,618
Against tons on October 18th, 1886	4,366	3,899	54,011	9,100
Against tons on October 1st, 1886	3,345	4,676	53,544	11,349

	1886. Tons fine.	1885. Tons fine.
Imports from Chili and Bolivia from 1st January to date	29,937	29,218
Imports from America from 1st January to date	15,310	29,406

Tin.—This metal has again taken an upward start, both here and in London, and prices have advanced here from 22·15@22·50c. for December, and 22·65c. for prompt shipment. Under the encouragement of an advancing market, more than 300 tons were sold on the Exchange during the week. The highest prices of the week were obtained to-day. London cables to the Metal Exchange quote spot at £101 7s. 6d., and three months at £102, which is an advance of 22s. 6d. during the week.

Lead—Is still heavy and the price, 4¼c., which we quoted a week ago as a rumor, has ruled during the week. Several hundred tons have been sold at 4¼c., and it is said that depressing offers and requests for bids have been made below this figure.

Stocks of foreign lead are considerably reduced here, and sales of considerable amount are reported as sold for re-export. London quotes £12 15s. to-day for soft Spanish.

It is not expected that prices of lead will advance very much here during the remainder of this year, 4¼ @4½c. being considered as probable limits. It is to be hoped that the manufacturers will find that the active demand that rules for all other products will come to lead also, and if so, the stocks would soon melt away and the market resume a tone in accord with that of other metals.

Messrs. John Wahl & Co., of St. Louis, telegraph us as follows to-day :

Our market is unchanged. Values nominally 4c., with retail sales only.

Messrs. Everett & Post, of Chicago, telegraph us as follows to-day :

Our market has declined since our last report under sales of 100 tons at 4·20c., and 80 tons at 4·10c. The demand is only moderate, and the absence of buyers is causing a decline. General trade is very dull.

Spelter.—There is no change in this market. We quote 4·30@4·35c. for Western brands, and 7c. for New Jersey. Silesian is quoted 4·75c. nominal. Silesian Spelter in London is quoted at £14 7s. 6d.

New Jersey Zinc Oxide, 4@4½c., according to grade.

Antimony.—We quote Cookson's at 9@9⅛c. Hallett's has remained at from 7½@7¾c. Hallett's is quoted in London to-day by cable to the Metal Exchange at £29 10s., another decline of 10s.

Nickel.—We quote 60@63c.

Bismuth—Is quoted at $2@$2.25 a pound.

Aluminium—Is quoted at 90c.@$1 an ounce. The success of the new Cowles electric smelting plant has already greatly reduced the value of this metal in alloys.

Quicksilver.—We quote here at 53½@54c. per pound. The market here remains about the same as last week. Fluctuations in London have caused the metal to fall from £7 10s. to £7 2s. 6d. per flask, and then to advance again to £7 5s.

Arsenic.—The English market is now well in the control of the combination, and the price of Powdered White has been advanced to £10 10s., which is fully £2 above the figures asked some few months ago.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Nov. 19.

American Pig.—This market continues very strong. A report has been circulated in the papers that the Thomas Iron Company has sold for next year's delivery at $19 for No. 1. We are authorized to say that this report is wholly erroneous. This company has not yet made prices or contracted for next year's make. Whether its price will, when made, be $19 or more, is not yet announced. It is known that this company has very conservative views, and is altogether opposed to "booms," preferring a steady business at moderate prices to the fluctuations of an excited market.

It is said that every furnace on the Lehigh capable of working has been put in blast.

Southern iron continues to come here in moderate quantity, the furnaces being for the most part well sold ahead and unwilling to make contracts. The Sloss new furnace, as well as the old furnace, are reported to be working very well. We hear of sales of No. 1 standard brands, Lehigh at $20, and No. 2 at $18.50. Iron continues scarce, and deliveries are urgently called for. We quote Lehigh brands, tide-water delivery, as follows : No. 1 X, Foundry, $19@$20 ; No. 2 X Foundry, $18@$18.50 ; Gray Forge, $16.50@$17 ; while less popular brands sell 50 cents below these figures, and fancy brands sell $1 above them.

Scotch Pig.—This market has remained unchanged during the week, though the demand increases with the difficulty in getting American foundry irons. We quote : Coltness, $21.50@$22 ; Gartsherrie, $20.50 ; Summerlee, $21@$21 25 ; Dalmellington, $19.50@$20 ; Langloan, $20@$20.50 ; Clyde, $19.50@$20 ; Glengarnock, $19.50@$20 ; Eglinton, $19@$19.50. Cables to the Metal Exchange to-day quote : Coltness, 50s. ; Langloan, 47s. 2d. ; Summerlee, 49s. 6d. ; Gartsherrie, 47s. ; Glengarnock, 44s. 6d. ; Dalmellington, 43s. 6d. ; Eglinton, 42s. 6d. ; Warrants, 42s. 2d. ; Middlesboro', No. 3, 32s. 1d. ; Hematite Pig, 44s. 6d. Freights are 7s. 6d.@9s.

Bessemer Pig.—The market is quiet and strong without quotable change in prices. We quote $18.75@$19.25 for Domestic, and $19.50 nominal for Foreign.

Spiegeleisen—Continues steady and prices nominally unchanged. We quote $26.50@$27 for German ; $27@$27 50 for English 20 per cent. Domestic we quote $27 for 20 per cent.

Steel Blooms and Billets.—Some sales are reported, but prices here are practically unchanged. We quote Rail Blooms, $27.50@$28 for Foreign. We quote Billets, $29@$30, according to size and quality.

Steel Plates.—The market is firm. We quote : Tank, 2·60@2·70c. ; Boiler and Ship Plates, 3@3¼c. ; Flanges, 3½c. ; Extra Flange and Fire-Box Plate, 4@4½c.

Steel Rails.—There is nothing new in the steel rail market. Prices remain at $34@$35 at Eastern mills, and as this figure leaves a remarkably handsome profit, the companies can well be happy. Nine or ten millions profit in a year should make the most fastidious happy.

Structural Iron and Steel.—The demand is very active, and we hear of some difficulty in securing supplies.

We quote Angles, 2@2¼c. ; Tees, 2½c. ; Steel Angles, 2·35@2·50c. American Beams and Channels, 3c. base from dock.

Merchant Steel.—The usual good business is doing, and quotations remain as follows : American Tool Steel, 7½@10c. ; special qualities, 11@20c. ; Crucible Machinery, 4@4·50c. ; Bessemer and Open-Hearth Machinery, 2½c.

Plate Iron.—Our Philadelphia correspondent reports a very urgent demand, and the same condition is found here. We quote : Common Tank, 2¼@2⅝c. ; Refined, 2 30@2½c. ; Flange Iron, 3¼@3½c. ; Extra Flange, 4@4·25c.

Bar Iron.—We quote : Refined at 1·75@2c. ; Common, 1·65@1·75c. Store prices are ·10@·20c. higher.

Rail Fastenings.—We quote Spikes, 2·15@2·25c. a pound ; Angle Fish-Bars, 1¾@2c. ; Bolts and Nuts, 2·50@3c.

Old Rails—Are quite firm and scarce. For Tees, $22 is asked, and $23@$24 for Double-Heads, but buyers' ideas are nearly $1 below these figures.

Scrap.—The market is quiet but firm. We quote $20 for Wrought Yard Scrap.

Some question has been raised as to the duty that rail ends should pay, whether as scrap or as iron or steel of a higher condition of manufacture. Our manufacturers naturally take the latter view.

Cast-Iron Pipe.—We hear of sales aggregating about 10,000 tons at prices within the limits of our quotations. We quote $28 for 36-inch pipe to $35 for 4-inch.

Philadelphia. Nov. 19.

[From our Special Correspondent.]

During the past week, a good deal of business has been done in standard and special iron of No. 1 and No. 2 Foundry and Forge. The demand seems to have been particularly in that direction. Among the sales made were Foundry in 50 and 100-ton lots, aggregating 3000 tons. No. 2 iron in 50-ton lots mainly, aggregating about 1500 tons. Founders are purchasing liberally both here and in some outside Eastern markets, and are confining themselves especially to the higher class of irons, because of the increasing prices ; $19.50@$20 is paid readily for No. 1 ; $17.50@$18 for No. 2 ; and very little Gray Forge sold this week under $17.

Muck-Bars.—Muck-Bars are in quite active demand, and 600 tons in all sold at $32 delivered.

Blooms.—Both anthracite and charcoal blooms are in good request, and the bloomaries are well sold up.

Manufactured Irons.—The week's business shows a slight falling off, so far as actual sales go. The inquiries show that there is a heavy demand to be supplied, and that the firmness of prices will be maintained all through. One hundred ton lots of medium iron commanded 1·70@1·75c. ; common iron is very little if any thing under it. Six mills have the greater share of inquiries this week.

Nails.—The nail trade is in an uncertain position. Large buyers would make heavy purchases ; but the impression seems to prevail that lower prices will be reached—a statement that is contradicted by every manufacturer here. Quotations are from $2@$2.20, according to size of order.

Plate and Tank Iron.—During the past two days, between 6000 and 7000 tons of plate and tank iron were contracted for for the earliest possible delivery, which will be some time next month. The Tank iron sold at $2 30 ; Plate iron, at $2.25. A good deal of inquiry is coming from the ship-yards, where it is expected a great amount of business will be soon placed for the winter.

Structural Iron.—A great deal of structural iron is wanted, and some difficulty is found by buyers in obtaining a portion of their supplies as soon as they will need them. Some buyers have left off placing orders a little too long. Angles are 2·15c., and Beams and Channels, 3c. The feeling among manufacturers is, that the winter will be a very busy one, and they are now figuring on specifications for between 3000 and 4000 tons.

Steel Rails.—Steel Rails are very firm at $35. It is understood that contracts have been placed in Pennsylvania mills within a few days for something over 50,000 tons in all.

Old Rails.—Old Rails are very scarce, and spot lots are quoted at $22.50. Prices will probably advance on account of the urgent need of buyers, some of whom are about out of material. There are a good many buyers in the market, and it is mere guess-work to say what they will do or at what prices they will be obliged to buy.

Scrap-Iron.—Scrap of all kinds is advanced. Selected lots are held at as high as $21.50@$22. No. 1 sold at $20@$20.50, and stocks to arrive are held at $21.

Pittsburg. Nov. 18.

[From our Special Correspondent.]

The iron market continues to show great strength. Many persons predicted that, after the heavy transactions of October, the demand would fall off, and that a dull and quiet market would follow. Such, however, was not the case. The demand and activity continue ; in fact, there seems to be no falling off in the demand for raw irons. In some cases, sellers are so unwilling to quote on large lots that buyers have to be satisfied with such quantities as they can obtain, which in many cases fell short of what they would like to purchase. Several city furnaces are selling only to regular customers ; again, others are more inclined to sell. Sales reported herewith include several made by the latter class. The future of iron is still a subject that attracts a good share of attention ; but there is a wide difference of opinion. When you talk of lower prices, makers of crude iron prefer to yield nothing at present, and refer to the advancing tendency in our material and labor as a reason for their firm quotations ; besides this, most of them are in a position to wait, because many of them have orders on their books for from one to two months' output. The effect of this has been to enhance the value of good brands, and cause higher prices to be demanded.

Prices.—If predictions based on present indications may be ventured upon, we should say that the changes are not likely to be important, but will continue for some time to have an upward tendency, as consumption is still on the increase.

Muck-Bars and Old Rails are very firm.

Pig-Iron.—Following are the current rates :

Coke or bituminous :	$	$
Foundry No. 1	18.50@	19 00
Foundry No. 2	17.50@	18 00
Gray F., No. 3	17.50@	8.00
" " No. 4	16.50 @	17.00
White	16 25@	16.50
Mottled	16.00@	6.50
Silvery	16.5 @	18.50
Bessemer	19.25@	19.75
Charcoal :		
Foundry No. 1	22.00@	23.00
Foundry No. 2	22.00@	....
Cold-Blast	26.50@	....
Warm-Blast	22.50@	24.00
20 p. c. Spiegel	@	28 50

	$	$
Muck-Bar	30.50@	31.00
Steel Blooms	32.00@	36.00
Steel Slabs	30.00@	33 00
Steel Crop Ends	@	23.00
Sh'l Bl'm Ends	@	22.50
Old Iron Rails	24 50@	25 00
Old Steel Rails	24 50@	25 50
No. 1 W. Scrap	19.50@	20.00
No. 2 W. Scrap	18.00@	18.50
Steel Rails	36.00@	....
" light sect's	37.00@	40 00
Bar Iron	1.70@	1.80
Iron Nails (60 days)	2 10@	2.15
Steel Nails	2.15@	2.25

Tons.	SALES SINCE LAST REPORT.		
1000	Gray Forge, Coke and Coal S. L. Ore	$18 00	4 mo.
800	imported Bessemer, December, "	22.75	cash.
150	Gray Forge, Coke and Coal S. L. Ore	17.25	cash.
50	" " "	18 00	4 mo.
35	No. 1 Foundry " "	18 75	4 mo.
25	" " "	18.75	4 mo.
300	Southern Mottled, Coke Native Ore	16 50	4 mo.
300	Gray Forge, " "	17.25	4 mo.
200	" all ore, " "	19 00	4 mo.
150	" " "	17.50	4 mo.
100	" all ore, " "	18.75	4 mo.
25	Fancy Silvery, " "	19 50	cash.
100	Cold Blast, Charcoal	26 50	4 mo.
100	Hot Blast, "	21.50	4 mo.
25	No. 1 Foundry, Charcoal	22 00	cash.
1500	December and January, Muck-Bars	31 25	cash.
2000	December, January, and Feb. "	31.75	cash.
500	December, "	31.50	cash.
350	Spot, "	30.50	cash.
800	American, Old Rails	24.75	cash.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Nov. 19.

Statistics.

Production of Coke on line of Pennsylvania RR. for week ended November 13th, and year from January 1st :

Tons of 2000 pounds.

	1886. Week.	1886. Year.	1885. Week.	1885. Year.
Allegheny Region	4,604	164,286	4,123	160,907
West Penn. RR	2,324	94 569	2 104	48.657
Southwest Penn. RR	64,088	2,327,274	26 032	1,582,813
Penn. & W. Region	6 708	285,215	5 293	206,021
Monongahela	4,070	123,346	2,019	80,966
Pittsburg Region		9		
Snow-Shoe	622	24,055	930	20,730
Total	82,416	3,018,84	81,501	2,099,094

Production Anthracite Coal for week ended November 13th, and year from January 1st:

Tons of 2240 lbs.	1886.		1885.	
	Week.	Year.	Week.	Year.
P. & Read. RR. Co..	290,119	9,980,900	285,203	9,924,434
L. V. RR. Co.....	167,955	5,278,199	189,277	5,181,631
D. L. & W. RR. Co.	116,224	4,401,410	134,492	4,337,710
D., & H. Canal Co..	98,083	3,061,458	110,122	2,803,794
Penna. RR.....	55,928	2,981,169	49,464	2,882,814
Penna. Coal Co.....	32,670	1,211,702	46,391	1,292,184
Penna. Canal Co...	17,594	447,655	15,124	398,452
Total...	778,573	27,362,493	830,073	26,821,019
Increase..	... ...	541,474	....	.....
Decrease.	51,500	....	....	.....

The above table does not include the amount of coal consumed and sold at the mines, which is about six per cent of the whole production.

Production for corresponding period:

1881.....	24,827,454	1883.....	28,060,808
1882.....	25,770,651	1884...	26,914,936

The report of the total output of coal from the mines on the line of the Chesapeake & Ohio Railroad for the week ended November 7th, 1886, and year from January 1st, is as follows, tons of 2240 lbs.: 1886, week, 29,574 tons; year, 1,063,673 tons; 1885, week, 22,143 tons; year, 947,388 tons. Increase, 1886, week, 7431; year, 116,285 tons.

Production Bituminous Coal for week ended November 13th, and year from January 1st:

Tons of 2000 pounds, unless otherwise designated.

EASTERN AND NORTHERN SHIPMENTS.

	1886.		1885.	
	Week.	Year.	Week.	Year.
Phila. & Erie RR...	.....	11,135	53	26,128
*Cumberland, Md..	57,735	2,166,353	56,468	2,422,223
*Barclay, Pa.....	2,930	160,393	4,573	204,639
*Broad Top, Pa.				
H. & Broad Top RR.	8,511	330,370	5,388	143,741
East Broad Top....	.....	. ....	.....	.....
Clearfield Region, Pa.				
Snow Shoe.....	3,414	94,122	2,238	127,111
Karthaus (Keating)	3,200	123,037	4 035	114,273
Tyrone & Clearfield	55,596	1,894,764	59,351	2,508,518
Alleghany Region, Pa.				
Gallitzin & Mountain	10,509	588,203	14,155	465,029
Pocahontas Flat Top Coal.				
Norf'k & West. RR.	19,882	742,953	17,932	514.045
Total 161,827		6,111,330	164,153	6,525,707

* Tons of 2240 lbs.

WESTERN SHIPMENTS.

Pittsburg Region, Pa.				
West Penn RR.....	5,629	277,785	5,104	192,781
SouthwestPenn.RR.	1,389	138,177	2,634	87,569
Pennsylvania RR .	6,829	241,168	6,776	207,062
Westmoreland Region, Pa.				
Pennsylvania RR...	30,962	1,076,704	42,641	1,008,501
Monongahela Region, Pa.				
Pennsylvania RR...	11,055	352,768	5,817	240,787
Total.....	55,855	2,086,602	62,962	1,736,700
Grand total.... ...	217,682	8,197,932	227,115	8,262,407

Anthracite.

Continued mild weather has made prices a shade weaker, and with some producers stocks have accumulated. There is a sufficient demand for all the coal produced; but, unfortunately, the orders are not equally distributed, and it is impossible to get the transportation necessary to supply the West, which, at the beginning of winter, is practically bare of coal. The Western demand is a very encouraging feature of the trade, and indicates that there will be a more active movement of coal this winter than ever before. Besides, it is stated that a very short period of cold weather will develop a demand here, and in the East, which will again cause an active movement of coal from all of the companies and permit circular prices to be enforced all around.

The general sales-agents made an Irish adjournment of their meeting to consider prices. They met on last Saturday instead of Monday, as had previously been announced. Prices were not advanced because the situation did not warrant such an action. The meeting was described as quite harmonious. That it was so probably was due to the recognition that "those who live in glass houses," etc.

It is said that the first steps in the proceedings of the people of the State of Pennsylvania vs. the coal combination and the Trunk Lines pool will actually be taken to-morrow. The officers of the companies will probably be somewhat annoyed by this action, but the coal trade will move on as before, and if the demand warrants it, prices will be advanced in the face of it. The question of discrimination against Philadelphia as compared with Port Richmond for shipment to the East will probably be a prominent feature of the investigations.

It is now thought that the actual work of the reorganization of Reading will soon begin, and not be greatly delayed in its completion. This is the most encouraging feature to the coal trade, and if the company can be furnished the capital necessary to conduct its next year's coal business as the solvent companies do, the price of coal for the year will probably average more than it otherwise would.

To-morrow, it is expected that the allotment for December will be determined. The general impression is, that it will be 2,500,000 tons, and it is expected that this quantity can be readily moved if the weather should be fairly cold.

We quote ordinary free burning coals, net, f.o.b., as follows:

	Week ended—		
	Nov. 19.	Nov. 12.	Nov. 5.
Lump.....	$3 40 ...	$3.40	$3.40 . ...
Steamboat.....	3.40	3.40	3.40 .....
Broken....	3.30@3.40	3.35@3.40	3.40 .....
Egg.	3 65	3 65	3 65 .....
Stove.....	3.85@4.10	3.90@4.10	3.80@4.10
Chestnut.....	3.35@3 45	3.40@3.50	3 30@3.50
Pea.....	2.10	2.10	2.10 ....
Buckwheat... ..	1 50@1.65	1.50@1.65	1.50@1 60
Dust.	1 20	1.25	1.25 . .

The Reading Company reduced its stock of coal at Port Richmond last week 409 tons, and had but 19,251 tons on hand.

Mr. John H. Jones, official accountant, furnishes the following statement of anthracite coal tonnage for the month of October, 1886, compared with the same period last year. This statement includes the entire production of anthracite coal, excepting that consumed by employés, and for steam and heating purposes about the mines:

Companies.	Oct., 1886.	Oct., 1885.	Difference.
Phila. & Reading RR...	1,309,678	1,237,321	I. 92,357
Lehigh Valley RR.....	666,244	700,733	D. 34,489
Del., Lack. & West. RR.	550,020	642,161	D. 92,141
Del. & Hud. Canal Co..	372,765	387,376	D. 14,611
Pennsylvania RR	256,237	241,195	I. 15,042
Pennsylvania Coal Co.	166,110	183,809	D. 17,699
N. Y., L. E. & W. RR ..	71,123	69,571	I. 1,552
Total	3,512,177	3,562,166	D. 49,989

Companies.	For Year 1886.	For Year 1885.	Difference.
Phila. & Reading RR..	9,440,577	9,370,612	I. 69,965
Lehigh Valley RR ...	4,960,204	4,817,843	I. 142,361
Del., Lack. & West. RR	4,165,280	4,070,653	I. 94,627
Del. & Hud. Canal Co.	2,867,010	2,598,792	I. 268,218
Pennsylvania RR	2,878,121	2,783,373	I. 94,748
Pennsylvania Coal Co.	1,140,676	1,195,957	D 55,281
N. Y., L. E. & W RR..	595,507	510,358	I. 85,149
Total	26,047,375	25,347,588	I. 699,787

The stock of coal on hand at tide-water shipping points, October 31st, 1886, was 440,962 tons; on September 30th, 1886, 518,306 tons; decrease, 77,344 tons.

Bituminous.

There has been a good demand on new orders this week and a pressing demand from contractors. There is a much better feeling in the trade, and higher prices have been secured than for some time past. Alongside in this city, we quote $3.15@$3.30 a ton. Cars are still scarce. The trade has had to meet this condition every fall for some years past; but it has not continued nearly as long before. Those who are working on the bituminous coal combination are keeping their actions a secret. Nevertheless, it is stated that very satisfactory progress is making.

Buffalo. Nov. 18.

[From our Special Correspondent.]

Since my last letter, no stirring events have occurred; no items worth chronicling have come to eye or ear; no discord has prevailed among our dealers. The only topic discussed has been the continued scarcity of coal cars and whether the probabilities of an increased freight tonnage might be expected in the near future.

There are no changes in prices of coal of any variety. Coke is unchanged.

It is stated that the offices of the West Bound Anthracite coal pool and of the Toledo pool are to be removed from New York to Chicago.

The near approach of winter causes anxious times among coal shippers and vessel owners. At the close of last week, the former wanted tonnage, but the latter had but little to offer; therefore the demand was in excess of the supply, and as consequence a strong market ruled, with prices tending upward. This week, chartering has been brisk, and the supply of coal light, with the prospect that many vessels will not obtain cargoes in time to leave with due regard to safety, although their owners expect the fulfillment of their contracts.

A severe storm has been and is still raging here. It began about two o'clock this A.M. The highest velocity of the wind was 58 miles an hour. Docks and breakwaters, also railroad trestles on Niagara River shore, are under water. Telegraph dispatches received this morning report terrible snow-storms on Lakes Superior, Michigan, and Huron. Doubtless more disasters will have to be recorded in addition to those of the past few days.

The coal shipments by lake Westward from November 11th to 17th, both days inclusive, were 57,100 net tons; namely, 26,990 to Chicago, 11,750 to Milwaukee, 5650 to Duluth, 2820 to Detroit, 4670 to Toledo, 880 to Green Bay, 360 to Alpena, 1300 to Port Huron, 480 to Ste. Marie, 3680 to Saginaw, 1890 to Bay City, 300 to Windsor, 600 to Amherstburg, 40 to Pequaming, and 1400 to Marquette, making the total for the season thus far 1,472,461 net tons (including vessels clearing from Tonawanda, but destination not stated).

The engagements and rates reported were as follows: $1.45@$1.50 to Chicago and Milwaukee; $1@$1.25 to Duluth; 60c. to Toledo; 50@60c. to Detroit; 60c. to Bay City; 75c. to Alpena; 50c. to Port Huron; 65c. to Saginaw; $1.75 to Marquette; $1.50 to Green Bay; $2.50 to Ste. Marie; 60c. to Amherstburg; 60c. to Windsor; and $1.20@$1.25 to Superior City; closing firm, but business hindered by the wintry prospects and storm prevailing.

The receipts of coal by canal at this port for the second week in November were 2160 net tons; and the shipments for the same period, 871 net tons.

The only coal charters reported during the past week were: 3 loads to Syracuse, 80c. gross ton, free on and off; 1 load to Lockport, 45c. net ton, free on and off; and 1 load to Troy, $1.25 net ton, free on and off. These will probably be the last shipments of the season. The up and down movement of coal on the canals this year falls considerably short of last season's.

The Erie, Champlain, Black River, Oswego, and Cayuga & Seneca canals will be closed for the winter on December 1st, unless sooner closed by ice. The improvements in the locks on the Erie and Oswego canals will begin immediately, so that the work may be completed before the opening of navigation in 1887.

Boston. Nov. 17.

[From our Special Correspondent.]

The market is as dull as ever, and, viewed from the Boston end, is not as easily maintained as at the last report. Outside parties are offering Stove coal freely at $3.85 f.o.b. at New York, and from that up to $4. The company price of $4.15 is merely a mark to show how high the tide has been, and, figuratively speaking, it looks distant and lonesome. Outsiders are not cutting to any extent save upon stove size. Broken, egg, nut, and pea are held at circular prices. The companies are also apparently holding up the price of stove, business or no business, as far as the Eastern trade goes.

All talk and no trade in the bituminous branch. At least, there is no trade worth noting. The proceedings of the secret meeting held to consider the subject of a pool on production for 1887 have not leaked out, despite various attempts to get at them. There is considerable talk here as to whether the natural course of trade will advance prices of bituminous coal next season without the intervention of a pool. A few agents think there will be an advance any way, but the majority, including some of the best and oldest heads, are equally confident that prices will remain at this season's low level if no pool is arranged and affairs take their ordinary course. The belief continues strong that a pool will be formed. We quote former figures of $2.10 f.o.b. at Hampton Roads and Baltimore, and $2.15 at Philadelphia.

Freights are steady at former figures. A fair supply of vessels is reported at all ports save Baltimore, where there are fewer than have been wanted.

The British steamer Enchantress, wrecked off Frying Pan Shoals, last March, is repairing at this port, and will be used in the coal trade, of course under the American flag. She will carry from 2200 to 2500 tons of coal, and will also tow the English steamer Lornty, which has been converted into a coal barge capable of carrying from 3000 to 3500 tons, or altogether from 5000 to 6000 tons; this in extension of the barge towing to Boston already done by Messrs. Burnham & Campbell.

We quote vessel rates exclusive of discharging as follows:

New York, 80@90c.; Philadelphia, $1@$1.05; Baltimore, $1.10@$1.15; Newport News and Norfolk, $1.05@$1.10; Richmond, $1.10@$1.15; Cape Breton $1.85@$2; Bay of Fundy, $1.60.

Retail trade is still as dull as ever. We quote delivered prices as follows:

White ash, furnace and egg	$5 00@$5.25
" stove and nut	5.25@ 5.50
Lehigh furnace, egg and stove	5.50@ 5.75
" nut	5.50@ 6.00
Shamokin egg	5.50@ 6.00
" stove	5.75@ 6.00
Lorberry egg and stove	@ 6.50
Franklin egg and stove	@ 7 00

Wharf prices are from 50 to 75c. less than the above.

Pittsburg. Nov. 18.

[From our Special Correspondent.]

The coal market is steady and firm, with the advance noted in our last maintained. The light rise in the Ohio on Sunday carried away about 3,000,000 bushels in flats and light barges. This would be of considerable value to Cincinnati retail buyers, who have been paying 16 cents a bushel. The prospect at this writing is favorable for water sufficient to carry off ten or twelve million bushels. The coal is loaded and ready to leave as soon as there is sufficient water. The rise was a beneficial one, as it would enable the boats that have been detained on their way up since August to reach port and be ready for the first rise. Another benefit—their arrival will furnish the mines with boats to load, and thus give them employment.

Present rates: River, f.o.b., 4@5c. a bushel; Railroad, 4½@5c. a bushel.

Connellsville Coke.—Demand is active. Railroad facilities are not more than half enough; in fact, there is a car famine. The Altoona shops turn out a car every hour, yet there is a deficiency. Blast-Furnace, $1.50 f.o.b. cars at ovens; Foundry, $1.75; Crushed, $2.25.

FINANCIAL.

Mining Stocks.

NEW YORK, Friday Evening, Nov. 19.

The interest in the mining market is constantly increasing, and the week under review shows a further growth of the business. The market has been active and strong, with a tendency toward higher prices.

The Comstocks have again taken the lead, and Consolidated California has reached still higher figures. It opened at $15, and on Wednesday sold as high as $22.50, closing at $18.75 on Thursday; no dealings in the stock were made to-day; the business was small, but 1055 shares changing hands. Sutro Tunnel has shown the largest business; 96,900 shares were sold, the prices ranging from 17@23c. Hale & Norcross advanced to $4 on Wednesday, but sold at $2.95 to-day. Little has been doing in Ophir, which sold only in the beginning of the week at from $9@$8.75. Sierra Nevada advanced from $2.90@$4, closing at $3.10. Yellow Jacket was firm at from $3@$4. Union Consolidated, which last week sold at from $1.10@$1.90, advanced to $3.25, closing at $2.50 this week. Mexican jumped from $2.85@$6, closing at $4.05. Best & Belcher declined from $7.50 to $4.75. Gould & Curry stood at $3.75; and Potosi, at $1.50. The rapid advance in some of these stocks is due solely to manipulation. None of the properties at the present time shows prospects that would warrant this rise.

The Tuscarora stocks were quiet, North Belle Isle ranging from $5.75@$6.88, Navajo, from 85c.@$1; and Belle Isle, from 48@35c.

The Colorado stocks have also come in for a large share of interest. Little Pittsburg shows a higher tendency, going from 52@68c. Leadville and Little Chief were firm, the former at from 50@51c.; and the latter at from 24@26c. Colorado Central sold at $2.65; during the week, 3656 shares were sold at auction at from $2.55@$2.60 a share. Robinson sold at from 42@41c.; and Chrysolite at from 61@60c. Lacrosse continues at 10 and 9c. Silver Cliff, which has appeared only at rare intervals for some time, is quoted at 6 and 11c. The ghost of Amie was able to create much activity; transactions amounting to 33,900 shares are recorded at 2c. and 3c.

A higher movement and considerable business was manifested in Bodie, which advanced from $2.40@$3.80. Bulwer declined from $2@$1.50. Standard was higher at from 80c.@$1.30. Mono was active at from $2.25@$3. Quicksilver Preferred and Common were firm; the former at from $24@$24.88, and the latter at from $6.50@$7.50. Plymouth Consolidated, from which good reports are received, holds its own at from $16.50@$16.25. Taylor-Plumas was active at from 11@15c.

Homestake has declared its "centennial" dividend, and, from all appearances, this grand property will distribute another hundred dividends to its stockholders; the price is firm at from $17.50@$18. Deadwood-Terra advanced from $2@$3.10. Caledonia, from $1.15@$1.25c.

Horn-Silver was more active than for some weeks past; it was quoted at from $1.70@$2. Ontario made a sale at $24.50. Some interest was shown in Stormont, which sold at from 11@13c.

A little boom occurred in Castle Creek, of which some 12,400 shares changed hands; the price advanced from 9@17c. It is stated that the company is on the eve of a consolidation with another property, said to be valuable.

Rappahannock, as usual, was active selling at from 11@13c.

Silver King, which has passed its second dividend, sold at from $6.50@$5.50.

Alice was firm at from $1.40@$1.50.

The total transactions amounted to 245,999 shares, showing an increase of 125,429 shares, as compared with the preceding week.

Coal Stocks.

Our forecast in this column a week ago has been fully realized, as there has been a good deal of a boom. The market has been broader than at any time this year, and but few stocks have failed to participate in the advances that have taken place. The labor troubles at Chicago, and a heavy snow-storm in the Northwest, have somewhat held back the grangers, while the mild weather has had a dampening effect on the standard coal stocks. The greatest cause for encouragement to the entire market was the announcement that Reading matters were rapidly approaching a favorable climax. It is stated that the reorganization scheme is now practically formulated; that J. Pierpont Morgan has accepted Mr. Gowen's subscribers to $4,000,000 to the reorganization syndicate, increasing that fund to $19,000,000, and that other important developments await announcement. Conservative people are afraid to deal in the stock at present, and are awaiting well-defined facts. The street predictions are, that it will sell between 45 and 50 very shortly.

Owing to the use of an excellent washing-machine Cameron Coal has been quite active, and shows a further advance. It would be an easy matter to put it 75, and no surprise to us if it went to 5. Colorado Coal has been firm. Maryland Coal has been quiet, and at one time weak. Patience will well reward holders of this stock. New Central Coal has been very active and advancing under a probable dividend of 1½ per cent. Hocking Valley has had another advance, and looks as though it would soon sell at about 50. Norfolk & Western has been very strong. Tennessee Coal and Iron has scored another large advance.

To-day, speculation has been very active, but has been largely confined to stocks of a fancy character. This is making conservative operators think that a reaction may not be far off, although the feeling on the entire market at the close was wildly bullish.

Meetings.

The annual and special meetings of the following companies will be held at the times mentioned:

Agogebic Exploring, Mining, and Manufacturing Company, Room 1, P.O. Block, Oshkosh, Wis., December 6th, at seven o'clock P.M.

Birmingham Rolling-Mill Company, Birmingham, Ala., December 15th, at eleven o'clock P.M.

Summit Exploring, Mining, and Manufacturing Company, Room 1, P.O. Block, Oshkosh, Wis., December 7th, at twelve o'clock M.

Dividends.

Amy & Silver Smith Consolidated Mining Company, of Montana, has declared dividend No. 5, of ten cents a share, or $34,141.90, payable on the 20th inst., at Butte.

Alturas Gold Company, Limited, of Idaho, has declared an interim dividend at the rate of 15 cents a year, for the quarter ended September 30th.

Big Bend Hydraulic Mining Company, of Dakota, has declared dividend No. 34, of three cents a share, or $6000, payable on the 20th inst., at No. 181 Broadway, New York City.

Homestake Mining Company, of Dakota, has declared dividend No. 100, of forty cents a share, or $50,000, payable on the 24th inst., at Messrs. Lounsberry & Co.'s, No. 15 Broad street, New York City.

Plymouth Consolidated Gold Mining Company, of California, has declared dividend No. 43, of twenty-five cents a share, or $25,000, payable December 4th, at No. 23 Nassau street, New York City.

Viola Company, Limited, of Idaho, has declared an interim dividend of 1s. a share, free of income tax, payable on the 5th inst. at London.

ASSESSMENTS.

COMPANY.	No.	When levied.	Delinquent in office.	Day of sale.	Amount.
Acme, Cal.	9	Oct. 25	Nov. 29	Dec. 20	.02½
Alta, Nev.	34	Oct. 16	Nov. 20	Dec. 10	.25
Aultman, Cal.	3	Oct. 26	Nov. 29	Dec. 20	.02½
Bear Butte, Dak	2	Oct. 16	Nov. 18	Dec. 6	¼
Benton Cons., Nev.	16	Oct. 27	Dec. 1	Dec. 21	.10
Best & Belcher, Nev.	35	Sept. 29	Nov. 4	Nov. 24	.50
Chollar, Nev.	...	Nov. 16	...	...	.50
Columbus Cons., Nev	4	Oct. 27	Nov. 29	Dec. 20	.50
Comstock & Belfast, Dak	2	Nov. 8	Dec. 9	Dec. 26	¾
Concord	...	Oct. 28	Dec. 1	Dec. 1	.02
Darboy, Dak	2	Nov. 1	Dec. 1	Dec. 15	.01
Diana, Nev.	6	Oct. 12	Nov. 22	Dec. 13	.25
Eureka, Dak	6	Sept. 27	Nov. 13	Dec. 14	.02½
Exchequer, Nev.	23	Oct. 18	Nov. 24	Dec. 15	.20
Gould & Curry, Nev.	54	Sept. 28	Nov. 3	Nov. 24	.50
Hale & Norcross, Nev	92	Aug. 8	Nov. 11	Nov. 30	.40
Independence, Nev.	16	Oct. 12	Nov. 16	Dec. 8	.20
Mountain Tunnel, Cal	2	Oct. 27	Nov. 29	Dec. 20	.10
Pneumatic, Cal.	1	Oct. 5	Nov. 18	Dec. 9	.12½
Pocahontas, Dak	2	Sept. 27	Oct. 27	*Nov27	.01
Potosi, Nev	26	Nov. 10	Dec. 14	Jan. 4	.30
Ruby Bell, Dak.	1	Nov. 4	Dec. 15	Dec. 31	¼
Santa Anita, Cal.	10	Oct. 26	Nov. 29	Dec. 20	.01½
Sierra Iron, Cal.	5	Nov. 11	Dec. 22	Jan. 18	2.50
South Fork, Cal	41	Sept. 29	Oct. 29	Nov. 29	2.00
Spring Valley, Cal.	1	Oct. 19	Dec. 3	Jan. 3	.25
Tallulah, Nev.	21	Oct. 30	Dec. 8	Dec. 29	.30
Tiewaukie, Utah	....	Oct. 8	Nov. 26	Dec. 13	.25
Tuscarora Tun'l, Nev	....	Nov. 4	Dec. 15	Jan. 10	7.50
Tyrolese, Idaho	....	Oct. 23	Nov. 30	Dec. 28	.15
Union Cons., Nev.	34	Nov. 3	Dec. 7	Dec 28	.25
West Galena, Dak.	5	June 5	*Nov30	*Dec20	¼

*The delinquent day and the day of sale were postponed to dates given above.

Pipe Line Certificates.

Messrs. Watson & Gibson, brokers, No. 49 Broadway, report as follows for the week:

Last Saturday, petroleum, which had just started up on the day before from its Rip Van Winkle sleep, opened at 71½, and sold up to 74¼ at the close. On Monday morning, it opened at 75, selling up to 77⅛, closing on a reaction at 74⅝. Tuesday, it sold up to 76⅛, having first sold down to 73. On Wednesday, it rallied to 77⅜, and since then has been down to 74⅝, closing to-night at 75⅛. From this record, it will be seen that the market has been active with wide fluctuations. The advance in crude was accompanied by an advance of ⅛ cent a gallon three consecutive days in refined, with a reduction of ⅛ on Thursday, the present price standing 7 cents. The movement in crude came with a rush, as it always does in this commodity. The conditions in the field have, of late, been growing more bullish, but it required a leader to move the market; and as the domestic and foreign demand for refined was good, refiners apparently interested themselves in favor of higher prices for crude, to stimulate free purchases of refined at an advance. The outlook is for higher prices for crude. The certificates of the American Cotton Oil Trust have been advancing, selling up to 60½ yesterday, and as the business is in a flourishing condition, we look for higher prices.

The following table gives the quotations and sales at the Consolidated Stock and Petroleum Exchange:

	Opening.	Highest.	Lowest.	Closing.	Sales.
Nov. 13	71½c.	74⅜c.	71⅜c.	74¼c.	12,640,000
15	75	77⅛	74½	74⅝	11,540,000
16	...	76⅛	73	....	11.262.000
17	....	77⅜	75⅛	....	8.645.000
18	75½	75½	74⅝	74⅞	3,525,000
19	75	75¾	74⅝	75⅛	2,531,000
Total sales in barrels (40 gallons)					50,143,000

Boston Copper and Silver Stocks.

[From our Special Correspondent.]

BOSTON, Nov. 18.

The week past has been a very active one in the copper stocks, and forcibly reminds us of the palmy days of 1881. Almost every one has the point to buy copper stocks, and orders have come in rapidly to buy, and but very few to sell. This is especially true of the low-priced speculative mines, of which very few are offered, and it is extremely difficult to fill the orders. In the dividend stocks, there has been a good business transacted, and prices have gone up in some cases far beyond what the most sanguine bull anticipated. There has been some realizing the past two days, and prices to-day are a little off from the highest of the week

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par value	Assessments. Total levied to date.	Assessments. Date and amount per share of last			Dividends. Total paid to date.	Dividends. Date and amount per share of last.		
1	Adams, s. L.	Colo.	$1,500,000	150,000	$10	*	.....	.....	.....	$525,000	Nov.	1886	.15
2	Alice, s. C.	Mont	10,000,000	400,000	25	*	.....	.....	.....	750,000	Sept	1886	.00¾
3	Amie Con., s. L.	Colo	5,000,000	50,000	10	*	.....	.....	.....	330,000	Oct	1883	.05
4	Amy & Silversmith, s.	Mon.	.....	344,419	.....	.....	.....	.....	.....	176,710	Nov	1886	.10
5	Atlantic, C.	Mich	1,000,000	40,000	25	$240,000	Apl.	1875	$1.00	320,000	Jan	1888	$1.00
6	Argentine, s	Nev.	10,000,000	100,000	100	295,000	July	1885	.10	40,000	Feb.	880	.20
7	Barbee & Walker, s.	Utah	1,000,000	90,000	10	*	.....	.....	.....	60,000	No	1880	10
8	Bassick, G. S.	Colo.	10,000,000	100,000	10	*	.....	.....	.....	400,000	Mar.	1884	1.00
9	Belle Isle, s.	Nev.	10,000,000	100,000	100	140,000	May	1886	.10	300,000	Dec.	1879	.25
10	Belcher, G. S.	Nev.	10,400,000	104,000	100	2,217,335	ec	1885	30	15,397,000	Apl.	1876	1.00
11	Bellevue Idaho, s. L.	Idah.	1,250,000	125,000	10	26,250	Dec.	1885	10	137,500	Oct	1886	.10
12	Big Bend Hydraulic, G	Dak.	1,000,000	200,000	5	*	.....	.....	.....	204,000	Nov.	1886	.03
13	Black Bear, G.	Cal.	3,000,000	30,000	100	22,500	Dec.	1881	.25	895,000	May	1883	.20
14	Bodie Con., G. S.	Cal.	10,000,000	100,000	100	324,990	Jun.	1886	.50	1,602,572	Apl.	1885	.50
15	Bonanza Developm't	C & H	3,000,000	300,000	10	.....	.....	.....	.....	135,000	Oct.	1882	.15
16	Bonanza K'g, Cons.	Cal.	1,000,000	100,000	10	*	.....	.....	.....	185,000	Feb	1885	.10
17	Boston & Mont, G.	Mont	2,500,000	25,000	10	*	.....	.....	.....	520,000	Jun	1886	.15
18	Breece, s	Colo.	5,000,000	200,000	25	*	.....	.....	.....	2,000	Fe	1880	.01
19	Brooklyn Lead, L. S	Utah	500,000	50,000	10	.....	.....	.....	.....	102,000	Sept	1886	.05
20	Bulwer, G	Cal	1,000,000	100,000	100	40,000	Oct.	1885	20	17,000	Jan.	1884	.10
21	Caledonia, s	Dak	10,000,000	100,000	100	515,000	May	1885	.15	40,000	Feb	1886	.10
22	Calumet & Hecla, C	Mich	2,500,000	100,000	25	1,200,000	..	....	.....	28,350,000	Nov.	1886	5.00
23	Carbonate Hill, s. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	80,000	Apl.	1884	.05
24	Carbon Con., s.	Colo.	1,500,000	150,000	10	*	.....	.....	.....	50,000	Mch	1880	.10
25	Castle Creek, G.	Utah.	100,000	100,000	1	.....	.....	.....	.....	51,000	Oct.	1883	.03
26	Catalpa, s	Colo.	3,000,000	300,000	10	*	.....	.....	.....	270,000	May.	1884	.10
27	Central, C	Mich	500,000	20,000	25	100,000	Sept	1861	.06	1,780,000	Jan.	1886	2.00
28	Chesterfield, s.	Utah	10,000,000	100,000	100	.....	.....	.....	.....	10,000	Jun.	1884	.10
29	Chrysolite, s. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	1,650,000	Dec.	1884	.25
30	Colorado Central, s. L.	Colo.	2,750,000	275,000	10	*	.....	.....	.....	171,250	Dec.	1886	.10
31	Cons Cal & Va., G. S.	Nev.	21,600,000	216,000	100	108,000	Jan.	1 85	.20	64,800	Fe	1885	.30
32	Con Gold Mining, G.	Ga.	500,000	100,000	5	*	.....	.....	.....	108,000	Nov.	1883	02
33	Contention, s	Ariz.	12,500,000	250,000	50	.....	.....	.....	.....	2,587,500	Dec.	1884	.25
34	Crescent, s. L. G.	Utah	15,000,000	600,000	25	*	.....	.....	.....	210,000	Auz.	1886	.05
35	Crown Point, G. S.	Nev.	10,000,000	100,000	100	2,675,000	Feb.	1882	.25	11,588,000	Jan.	1875	2.00
36	Deadwood-Terra, G.	Dak.	5,000,000	200,000	25	*	.....	.....	.....	$900,000	Jan.	1885	.10
37	Derbec S. Grav., G. S.	Cal.	10,000,000	10,000	100	90,000	Dec.	1831	.10	140,000	Jun.	1886	.10
38	Dianda, s. L.	Colo.	5,000,000	200,000	25	*	.....	.....	.....	220,000	Sept	1884	.05
39	Elkhorn, G. S.	Mont	1,000,000	100,000	10	50,000	July	1883	.50	140,000	Sept	1886	.50
40	Eureka Con., G. S. L.	Nev.	5,000,000	50,000	100	50,000	July	1883	1.00	4,817,500	July	1882	.25
41	Evening Star, s. L.	Colo	50,000	50,000	10	*	.....	.....	.....	1,100,000	Nov	1883	.50
42	Excelsior, G.	Cal.	10,000,000	100,000	100	563,000	Sept	1885	1 00	875,000	Oct.	1880	.25
43	Father de Smet, G.	Dak.	10,000,000	100,000	100	200,000	Nov	1874	1.00	1,125,000	Dec	1885	.20
44	Franklin, C.	Mich	1,000,000	40,000	25	220,000	Jun	1871	....	52,000	Jun.	1886	1.00
45	Freeland, G. S. C.	Colo	5,000,000	200,000	25	*	.....	.....	.....	190,000	Ju.y	1886	.10
46	Fresno Enterprise, G	Cal.	5,000,000	100,000	50	*	.....	Meh	1883	110,000	July	1882	.10
47	Gould & Curry, G. S.	Nev.	14,400,000	108,000	100	4,055,000	Sept	1886	.50	3,826,000	Oct	1879	10.00
48	Grand Central, s.	Ariz.	1,000,000	10,000	10	.....	.....	.....	.....	625,000	Dec.	1882	.25
49	Grand Prize, s.	Nev.	10,000,000	100,000	100	570, 0	Apl.	1886	.50	495,000	Mar.	1884	.25
50	Granite, s.	Colo	125,000	25,000	1	.....	.....	.....	.....	6,250	May	1883	.01
51	Granite Mountain, s.	Mont	10,000,000	100,000	25	.....	.....	.....	.....	1,500,000	Oct.	1886	.25
52	Green Mountain, G.	Cal.	1,250,000	125,000	10	*	.....	.....	.....	212,000	Nov.	1884	.07½
53	Hale & Norcross, G. S	Nev.	11,200,000	112,000	100	4,971,800	Oct.	1886	.40	1,596,000	Apl	1871	5.00
54	Hall-Anderson, G.	N. S.	150,000	15,000	1	.....	.....	.....	.....	7,000	Jan.	1882	05
55	Hecla Con., s. G. L. C	Mont	1,500,000	30,000	50	.....	.....	.....	.....	1,032,000	July	1886	.50
56	Helena Mg & Red, G. S. L.	Mont	3,315,000	663,000	5	*	.....	.....	.....	197,970	July	1886	.06
57	Holmes, s	Nev.	10,000,000	100,000	100	300,000	Sept	1885	10	70,000	Apl	1886	.25
58	Holyoke, G.	Idah.	20,000,000	200,000	1	.....	.....	.....	.....	27,000	Feb.	1885	.10
59	Homestake, G.	Dak	12,500,000	125,000	100	200,000	July	1879	1.00	3,668,700	Dec	1886	.40
60	Honorine, s. L.	Utah	5,000,000	250,000	2	25,000	Jun	1883	....	75,000	Sept	1886	.05
61	Hope, s.	Mont	400,000	8,000	50	*	.....	.....	.....	158,252	Oct.	1884	1.50
62	Horn Silver, s. L.	Utah	10,000,000	400,000	25	*	.....	.....	.....	4,000,000	Nov	1884	.50
63	Idaho, G.	Cal.	310,000	3,100	100	.....	.....	.....	.....	3,750,000	Jua.	1886	7.50
64	Ideal, s. L.	Colo.	1,500,000	150,000	10	.....	.....	.....	.....	15,000	Oct	1886	.05
65	Independence, s.	Nev.	10,000,000	100,000	100	340,000	Oct.	1886	.20	225,000	se t	1879	.25
66	Indian Queen, s.	Nev.	250,000	25,000	2	.....	.....	.....	.....	368,750	July	1883	.03
67	Inyo, G.	Cal.	500,000	100,000	5	*	.....	.....	.....	45,000	Apl.	1882	.05
68	Iron Hill, s.	Dak.	2,500,000	250,000	50	82,500	Oct.	1885	....	112,500	Oct.	1886	.05
69	Iron-silver, s. L.	Colo	10,000,000	500,000	50	*	.....	.....	.....	1,700,000	July	1886	20
70	Jackson, G. S.	Nev.	5,000,000	50,000	100	10,000	Nov.	1880	.20	45,000	Oct.	1886	.10
71	Jacalitita, s.	Mex.	2,500,000	250,000	10	.....	.....	.....	.....	1,200,000	Feb.	1885	.50
72	Kentuck	Nev.	3,000,000	30,000	100	342,000	Nov	1881	.30	1,350,000	July	1884	.10
73	La Plata, s. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	610,000	Sept	1882	.30
74	Leadville Cons., s. L.	Colo	4,000,000	400,000	10	*	.....	.....	.....	410,000	Oct	1886	.05
75	Lexington, G. S.	Mont	4,000,000	40,000	100	*	.....	.....	.....	565,000	Jan	1885	2.00
76	Little Chief, s. L.	Colo	1,000,000	200,000	50	*	.....	.....	.....	780,000	Mch	1885	.10
77	Little Pittsburg, s. L	Colo.	20,000,000	200,000	100	*	.....	.....	.....	1,050,000	Mch.	1885	.50
78	Manhattan, s.	Nev.	5,000,000	50,000	100	150,000	July	1879	1.00	437,500	Feb	1886	.25
79	Marguerite, G.	Cal.	500,000	20,000	25	.....	.....	.....	.....	18,750	Oct.	1882	.25
80	Marion Ballion, G	N. C	500,000	.....	.....	.....	.....	.....	.....	15,000	Jan	1886	....
81	Martin White, s.	Nev.	10,000,000	100,000	100	1,150,000	Mar.	1885	25	115,000	Oct.	1886	.25
82	Minnesota, C.	Mich	1,000,000	40,000	25	420,000	Apl.	1886	1 00	1,825,000	Mar.	1876	.....
83	Mono, G.	Colo.	5,000,000	50,000	100	56,000	Jun.	1885	.50	12,500	Mar	1886	.25
84	Mon ana, Lt, G. S.	Mont	3,300,000	33,000	10	*	.....	.....	.....	795,000	Oct.	1886	.62
85	Morning Star, s. L.	Colo.	1,000,000	100,000	10	.....	.....	.....	.....	600,000	Oct.	1886	.30
86	Mulligan, s. G.	Mont	2,000,000	200,000	5	*	.....	.....	.....	230,000	Aug	1886	.07½
87	Mount Pleasant, G.	Cal.	150,000	150,000	1	*	.....	.....	.....	105,000	Mar.	1884	.10
88	Mt. Diablo, s	Nev	5,000,000	50,000	100	137,500	Jun	1883	2.00	80,000	Jul	1885	.20
89	Napa, G.	Nat.	700,000	100,000	.....	.....	.....	.....	.....	290,000	Jan	1883	.10
90	Navajo, G. S.	Nev.	10,000,000	100,000	100	335,000	Mar.	1886	25	325,000	Feb	1885	.25
91	N. Hoover Hill, G. S.	N. C.	300,000	120,000	2½	*	.....	.....	.....	30,000	Dec.	1885	.06½
92	New York Hill, G.	Cal.	5,000,000	50,000	100	62,500	Oct	1885	.15	215,000	Aug	1882	.10
93	Northern Belle, s.	Nev.	5,000,000	50,000	100	425,000	Jan	1884	8.50	2,400,000	Apl.	1884	50
94	North Bell Isle, s.	Nev.	10,000,000	100,000	100	150,000	Mar	1886	.20	30,000	Aug.	1881	.15
95	Ontario, s. L.	Utah	15,000,000	150,000	100	.....	.....	.....	.....	7,775,000	Oct	1886	.50
96	Opair, G. S.	Nev.	10,000,000	100,000	100	3,957,800	Jun.	1886	.25	1,595,000	July	1882	1.00
97	Original, s. C.	Mont	1,500,000	60,000	25	*	.....	.....	.....	114,000	Oct.	1884	.05
98	Osceola, C.	Mich	1,250,000	50,000	25	480,000	Apl.	1876	1.60	972,500	Sept	1884	25
99	Oxford, G	N. S.	125,000	125,000	1	*	.....	.....	.....	34,500	Oct.	18 5	.02
100	Paralise Valley, G. S	Nev.	10,000,000	100,000	100	47,000	Mar.	1882	.15	130,000	Sept	1886	.25
101	Pleasant Valley, G. S.	Cal.	10,000,000	100,000	100	40,000	Mar	1884	.10	30,000	Dec.	1882	.05
102	Platus, G. S. C. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	2,000	Feb	1886	.10
103	Plymouth Con., G.	Cal.	5,000,000	100,000	50	*	.....	.....	.....	1,825,000	Dec.	1883	.25
104	Prussian, s. L.	Colo	1,500,000	150,000	10	.....	.....	.....	.....	132,000	Jan	1884	.10
105	Quick liver, pref., G	Cal.	4,300,000	43,000	100	.....	.....	.....	.....	785,150	Aug.	1886	1.25
106	" " com., G	Cal.	5,700,000	57,000	100	.....	.....	.....	.....	151,000	July	1885	.40
107	Quincy, C.	Mich	1,000,000	40,000	25	200,000	Dec.	1863	.....	4,441,000	July	1884	2.00
108	Richmond, s. L.	Nev.	1,350,000	54,000	25	*	.....	.....	.....	4,177,587	May	1883	1.25
109	Ridge, C.	Mich.	500,000	20,000	25	220,000	Mar	1880	.50	10,000	Feb	1880	.50
110	Rising Sun, s.	Dak.	750,000	150,000	5	*	.....	.....	.....	52,000	May	1881	.07½
111	Robinson Con., s. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	545,000	Mar.	1886	.05
112	Robert E. Lee, s. L.	Colo	10,000,000	500,000	20	*	.....	.....	.....	100,000	Dec.	1882	.10
113	Rooks, G.	Vt.	500,000	50,000	10	*	.....	.....	.....	61,000	Apr	1885	.30
114	San Francisco, C.	Cal.	5,000,000	50,000	100	45,000	Sept	188	.50	20,000	Feb.	185	.05
115	Savage, s.	Nev.	11,250,000	112,000	100	6,156,000	Jun.	1886	.50	4,460,000	July	1879	3.00
116	Security L Mg., Mfg	Colo.	1,000,000	100,000	10	*	.....	.....	.....	5,000	July	1884	.....
117	Shoshone, G.	Idah	15,000,000	150,000	1	.....	.....	.....	.....	7,500	Apl.	1883	.01
118	Sierra Buttes, G.	Cal.	225,000	22,500	10	.....	.....	.....	.....	1,438,964	ct	1886	.37
119	Sierra Grande, s.	N. M.	2,500,000	500,000	5	.....	.....	.....	.....	860,000	Sept	1884	.25
120	Sierra Nevada, G. S.	Nev.	10,000,000	100,000	100	5,072,698	Sept	1886	.25	102,000	Jan.	1871	1.00
121	Silver Cord, G. S. L.	Colo.	5,000,000	500,000	10	.....	.....	.....	.....	225,000	Nov.	1883	.25
122	Silver King, s.	Ariz.	10,000,000	100,000	100	.....	.....	.....	.....	1,750,000	Aug	1884	.25
123	Silverton, G. S. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	71,000	Nov	1886	.02
124	Small Hopes Cons., s.	Colo.	5,000,000	250,000	20	*	.....	.....	.....	2,375,000	Oct	1885	.20
125	Smuggler, s. L.	Colo.	600,000	6,000	100	.....	.....	.....	.....	66,700	Aug	1884	.25
126	Socorro, C.	N.	250,000	25,000	10	.....	.....	.....	.....	4,000	Mch	1882	.00¼
127	South Yuba, G.	Cal.	2,000,000	40,000	50	*	.....	.....	.....	150,000	Oct.	1881	.75
128	Spring Valley, G.	Cal.	2,000,000	2,000	1	50,000	Oct.	1886	.25	50,000	Jan.	1881	.25
129	Standard, G. S.	Cal.	10,000,000	100,000	100	25,000	Oct.	1884	.25	4,425,000	Mar.	1884	.25
130	Stormont, s.	Utah	500,000	100,000	1	*	.....	.....	.....	155,000	Nov.	1881	.05
131	St. Joseph, L.	Mo.	1,100,000	110,000	10	*	.....	.....	.....	562,000	July	1886	.60
132	Syndicate, G.	Cal.	10,000,000	100,000	100	38,729	July	1882	.15	48,338	Sept	1885	.10
133	Tip Top, s.	Ariz	10,000,000	100,000	100	253,000	Sept	1883	.25	100,00	Nov.	1881	.20
134	Tombstone, G. S. L.	Ariz	12,500,000	500,000	25	*	.....	.....	.....	1,250,000	Apl.	1882	.10
135	True Fissure, G. S. L.	Utah	1,500,000	150,000	10	*	.....	.....	.....	75,000	Jun	1883	.15
136	United Verde, C.	Ariz	3,000,000	300,000	10	*	.....	.....	.....	97,500	Feb.	1884	.20
137	Valencia, M	N. M.	1,500,000	1,500	100	*	.....	.....	.....	41,25	pl	1886	2.50
138	Vizina, s.	Ariz	5,000,000	200,000	25	*	.....	.....	.....	14,000	Apl.	1882	.10
139	Yankee Girl	Colo.	2,500,000	250,000	10	.....	.....	.....	.....	1,062,500	Oct.	1883	10
140	Yellow Jacket, G. S.	Nev.	12,300,000	123,000	100	5,448,000	Dec.	1885	.75	2,184,000	Aug	1871	1.50

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Value	Assessments. Total levied to date.	Assessments. Date and amount per share of last			
1	Agassiz Cons., s. L.	Colo.	$2,500,000	50,000	$50	*	.....	.....	.....	
2	Aiblon, s. L.	Nev.	15,000,000	150,000	100	$577,000	July	1882	.50	
3	Allouez, C.	Mich	2,000,000	80,000	25	240,000	Feb.	1884	.50	
4	Alpha Con., G. S.	Nev.	3,000,000	30,000	100	430,000	Mar	1886	.50	
5	Alta, s.	Nev.	10,08 ,000	100,800	100	1,976 600	Oct	1866	.25	
6	American Flag, s.	Colo	1,250,000	125,000	10	300,000	Jun.	1877	.25	
7	Anglo-Montana, Lt.	Mon.	6 0,000	120,000	5	.....	.....	.....	.....	
8	Appalachian, Lt., G.	N. C.	1,500,000	3 0,000	5	.....	.....	.....	.....	
9	Aspen Mg. & S, s. L.	Colo.	2,000,000	200,000	10	.....	.....	.....	.....	
10	Barcelona, G.	Nev.	5,000,000	200,000	25	*	.....	.....	.....	
11	Battle Creek, G.	Dak.	5,000,000	2 0,000	25	.....	.....	.....	.....	
12	Bear Creek.	Cal	300,000	300,000	1	.....	.....	.....	.....	
13	Bechtel Con., G.	Cal.	10,000,000	100,000	100	173,500	n	1888	.10	
14	Belvidere.	Cal.	.....	60,000	.....	92,000	b.	1882	.15	
15	Belmont, s.	Nev	5,000,000	50,000	100	735,00	Apl	18 6	.10	
16	Best & Belcher, G. S	Nev.	10,080,000	100,800	100	1,748,500	Sept	1886	.50	
17	Big Pittsburg, s. L.	Colo.	20,000,000	200,000	100	*	.....	.....	.....	
18	Black Jack, G.	Cal.	250,000	100,000	2½	*	.....	.....	.....	
19	Bonanza Chief	Mon	1,000,000	1,000,000	1	*	.....	.....	.....	
20	Bondholder.	Colo	5 0,000	200,000	2½	*	.....	.....	.....	
21	Boston Con., G	Cal.	13,000,000	130,000	100	170,000	Nov	1883	.25	
22	Bradshaw, s.	Ariz.	2,25 ,000	22 ,000	10	*	.....	.....	.....	
23	Buckeye Common	Colo.	2,000,000	400,000	5	*	.....	.....	.....	
24	Bull Domingo, s. L.	Colo	10,000,000	200,000	50	*	.....	.....	.....	
25	Bullion, G. S.	Nev	10,000,000	100,000	100	4,600,000	Aug	1885	.30	
26	Bye and Bye	Ariz.	1,000,000	100,000	10	*	.....	.....	.....	
27	Calaveras, G.	Cal.	500,000	500,000	1	*	.....	.....	.....	
28	Catskill, s.	Nev.	1,500,000	30 ,000	5	*	.....	.....	.....	
29	Central Arizona, s	Ariz	10,000,000	1 0,000	100	*	.....	.....	.....	
30	Con Contin'l, G. S. L.	C & A	2,000,000	200,000	10	*	.....	.....	.....	
31	Charles Dickens.	Idah.	1,250,000	250,000	5	.....	.....	.....	.....	
32	Cherokee, G.	Cal.	1,500,000	15 ,000	10	.....	.....	.....	.....	
33	Cholla, s.	Nev.	11,200,000	112,000	100	1,096,000	Nov	1886	.50	
34	Cinnamon Mt., G. S	Colo.	750,000	150,000	5	.....	.....	.....	.....	
35	Climax, s. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	
36	Colorado No. 2, s. L	Colo.	100,000	10,000	10	.....	.....	.....	.....	
37	Con. Imperial, G. S.	Nev.	50,000,000	500,000	100	1,100,00	Aug	1886	10	
38	Con. Pacific, G.	Cal.	6,000 000	6 ,000	100	174,00	Feb.	1886	.15	
39	Cons Silver, s	Mo.	2,500,000	250,000	10	.....	.....	.....	.....	
40	Cop. Queen Cons, C	Ariz	1,100 00	110,0 0	10	.....	.....	.....	.....	
41	Courtlandt	Colo	500,000	50,000	10	.....	.....	.....	.....	
42	Crescent, s. L.	Colo.	3,000,000	30 ,000	10	*	.....	.....	.....	
43	Crocker, s.	Ariz.	10,000,000	100,000	100	65,000	May	1886	.20	
44	Crowell, G.	N. C	5 0,000	5 0,000	1	*	.....	.....	.....	
45	Dahlonega, G.	Ga.	250,0 0	250,000	1	*	.....	.....	.....	
46	Dandy, s.	Colo.	5,000,000	500,000	10	.....	.....	.....	.....	
47	Darlanelles, G.	Cal.	1,000,000	100,000	10	.....	.....	.....	.....	
48	Decatur, s.	Colo.	1,500,000	300,000	5	*	.....	.....	.....	
49	Denver City, s. L.	Colo.	5,000 0 0	50 ,000	10	*	.....	.....	.....	
50	Denver Gold.	Colo.	300,000	60,000	5	*	.....	.....	.....	
51	Deseret, G. S.	Utah	500,000	50, 00	10	*	.....	.....	.....	
52	Dunkerberg, s.	Colo	1,500,000	150,000	10	*	.....	.....	.....	
53	Durango, G.	Colo.	500,00	500, 00	1	*	.....	.....	.....	
54	Durango T.	Mex	120,000	1,200	100	.....	.....	.....	.....	
55	Eastern Dev. Co., Lt	N. S	1,500,000	150,000	10	900,000	Mar.	1886	1.00	
56	Elko Con., s.	Nev.	.....	.....	.....	.....	Mar	1884	.15	
57	Empire Lt., G.	Mon	5 0,000	100,000	5	.....	.....	.....	.....	
58	Empire, s.	Utah	10,000,000	100,00	100	.....	.....	.....	.....	
59	Enterprise, s. L.	Colo	800,000	80,000	10	*	.....	.....	.....	
60	Eureka Tunnel, s. L	Ev.	10,000,000	1 0,000	100	*	.....	.....	.....	
61	Exchequer.	Nev.	10,000,000	1 0,000	100	860,000	Oct.	1886	.20	
62	Garfield, Lt., G. S.	Nev.	500,000	100,000	5	.....	.....	.....	.....	
63	Gold Placer, G.	Colo	5,000,000	200,000	25	*	.....	.....	.....	
64	Goodshaw, G.	Cal.	10,000,000	10 ,000	100	229,314	Dec.	188	.25	
65	Grand Belt, C	Te.	12,000,000	120,000	10	*	.....	.....	.....	
66	Grant Duke.	Colo	800,000	80,000	10	.....	.....	.....	.....	
67	Gregory-Bobtail, G.	Colo.	550,000	550,000	1	.....	.....	.....	.....	
68	Gregory Con., G	Mon.	3,000,000	300,000	10	*	.....	.....	.....	
69	Harlem M. & M. Co, G.	Cal.	1,000,000	200,000	5	.....	.....	.....	.....	
70	Head Cent. & Tr. s, G	Ariz.	10,000,000	100,000	100	.....	.....	.....	.....	
71	Hidalgo, s.	Mex	200,000	20,000	10	.....	.....	.....	.....	
72	Highland, C	Mich	500,000	25,000	25	.....	.....	.....	.....	
73	Hortense, s.	Colo.	2,000,00	20 ,000	10	.....	.....	.....	.....	
74	Iroquois, C	Mich	1,250,000	50, 00	25	.....	.....	.....	.....	
75	J. D. Reymert.	Ariz	10,000,000	100,000	100	*	.....	.....	.....	
76	Julia Cons., G. S.	Nev.	11,000,000	110,000	100	1,438,000	Nov	188	.10	
77	Kearsarge, C.	Mich	1,250,000	50,000	25	100,000	Apl.	188	5.00	
78	Lacrosse, G.	Colo.	1,000,000	100,000	10	*	.....	.....	.....	
79	Lee Basin, s. L.	Colo.	5,000,000	500,000	10	*	.....	.....	.....	
80	Leviathan, s.	Nev.	10,000,000	100,000	100	380,000	Sept	188	.25	
81	Lucerne, s.	Colo.	5,000,000	500,000	10	*	Jan.	1886	.10	
82	Mammoth Bar, G.	Cal.	10,000,000	100,000	100	50,000	Dec.	1881	.....	
83	Mariposa pref., G.	Cal.	5,000,000	50,000	100	1,687,500	Feb	1883	.25	
84	" common, G.	Cal.	10,000,000	100,000	100	1,975, 00	Dec	1881	.20	
85	May Belle, G.	Cal.	10,000,000	100,000	100	84,000	Mar	1884	.15	
86	Mayflower Gravel.	Cal.	1,0 0,000	100,000	100	80,000	Sept	1886	.25	
87	Mexican, G. S	Nev	10,000,0	100,800	100	2,563,200	Jun.	1886	.25	
88	Mine & Starr, s. L.	Colo	1,000,000	200, 00	5	*	.....	.....	.....	
89	Miner Boy, G. S. L.	Colo.	5,0 0,000	500,000	10	*	.....	.....	.....	
90	Miller	Nev	5,000,000	200,000	25	.....	.....	.....	.....	
91	Moose Silver, s.	Colo	3,0 0,00	300,000	10	*	.....	.....	.....	
92	Nachoochee, Lt

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

Name and Location of Company.	Nov. 13.		Nov. 15.		Nov. 16.		Nov. 17.		Nov. 18.		Nov. 19.		Sales.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Alice, Mon	.....	.....	.....	.....	.....	.....	.....	.....	1 50	1.40	1 50	1.40	1,200
Amie Con., Co	.....	.....	.02	.....	.03	.02	.03	.....	.03	.....	.03	.02	33,900
Argenta, Ne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bassick, Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.17	.16	500
Belle Isle, Ne	.40	.....	.41	.40	.48	.40	.47	.....	.40	.35	.35	.....	7,600
Bodie Cons., Ca	2.40	.....	2.45	.....	2.70	2.45	3.50	2 90	3.80	3.75	.....	.....	5,054
Breece	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bulwer, Ca	.....	.....	1.75	.....	1.90	1.75	2.00	.....	1.90	1.50	.....	.....	2 300
Caledonia	.....	.....	.....	.....	1.15	.....	1.25	1.15	.....	.....	.....	.....	1,300
Carbonate Hill	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chrysolite, Co	.....	.....	.....	.....	.....	.....	.61	.60	.....	.....	.60	.....	1,200
Colorado Central	.....	.....	.....	.....	.....	.....	.....	.....	2.65	.....	.....	.....	100
Cons. Cal. & Va., Ne	15.00	.....	20.00	15 50	.....	.....	22 50	21.00	18.88	18.75	.....	.....	1,055
Crown Point	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deadwood	2.00	.....	.....	.....	3.00	2.50	3 10	2 90	3.10	.....	3.00	2 95	5,210
Dunkin	.....	.....	.....	.....	.40	.....	.....	.....	.....	.....	4.50	.....	100
Eureka Cons., Ne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Father de Smet, Dk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Freeland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Stripe, Ca	.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,000
Gould & Curry, Ne	.....	.....	.....	.....	3.75	.....	.....	.....	.....	.....	.....	.....	100
Green Mountain, Ca	.....	.....	.....	.....	.....	.....	.20	.17	.....	.....	.50	.....	300
Hale & Norcross, Ne	3.25	2.95	3.40	3.05	3.25	.....	4.00	3.70	3.50	.....	2.95	.....	2,190
Helena	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Homestake, Dk	18.00	17.50	18.00	.....	.....	.....	17.75	.....	18.00	.....	.....	.....	420
Horn-Silver, Ut	1.80	1.70	.....	.....	.....	.....	1.80	1.75	1 90	1.75	2.00	1.90	2,100
Independence	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iron Hill	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iron Silver, Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leadville C., Co	.51	.50	.....	.....	.51	.50	.....	.....	.....	.....	.....	.....	2,000
Little Chief, Co	.....	.....	.....	.....	.25	.24	.28	.26	.26	.....	.27	.26	2,200
Little Pittsburg, Co	.52	.....	.....	.....	.57	.53	.60	.59	.64	.61	.63	.66	1,700
Martin White, Ne	.95	.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Moulton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Navajo, Ne	.....	.....	.....	.....	.85	.....	1.00	.....	.....	.....	.95	.....	750
North Belle Isle, Ne	5.75	.....	.....	.....	6.88	.....	.....	.....	.....	.....	.....	.....	100
Ontario, Ut	.....	.....	.....	.....	24 50	.....	.....	.....	.....	.....	.....	.....	20
Ophir	9.00	.....	.....	.....	9 00	8.75	.....	.....	.....	.....	.....	.....	300
Plymouth	.....	.....	16.50	.....	16 25	.....	.....	.....	.....	.....	.....	.....	200
Quicksilver Pref., Ca	.....	.....	24 88	24.00	24.88	24.75	24 75	24.50	24 50	24 25	.....	.....	1,720
" Com., Ca	.....	.....	6.50	.....	7.00	.....	7.50	7.25	7.00	.....	.....	.....	600
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Robinson Cons., Co	.....	.....	.42	.....	.....	.....	.....	.....	.42	.41	.41	.....	1,400
Savage, Ne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nevada, Ne	2.90	.....	3.10	3.00	3.25	.....	.....	.....	4.00	.....	3.15	3.10	1,775
Silver King, Ar	.....	.....	.....	.....	6.50	.....	.....	.....	.....	.....	5.50	.....	200
Spring Valley, Ca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard, Ca	.....	.....	.80	.....	.....	.....	1.00	.....	1.30	1.20	.....	.....	1,200
Stormont, Ut	.11	.....	.12	.11	.13	.12	.13	.....	.....	.....	.12	.....	3,800
Tip Top, Ar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yellow Jacket	3.15	3.00	.....	.....	3.50	.....	4 00	.....	.....	.....	3.75	3.50	850

NON-DIVIDEND-PAYING MINES.

Name and Location of Company.	Nov 13.		Nov. 15.		Nov. 16.		Nov. 17.		Nov. 18.		Nov. 19.		Sales.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Albion	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alta	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
American Flag	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barcelona, G	.....	.....	.....	.....	.08	.....	.....	.....	.....	.....	.....	.....	500
Bechtel Con., G	.08	.....	.....	.....	.10	.....	.....	.....	.....	.....	.....	.....	400
Belvidere	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belcher	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Best & Belcher, G. S	.....	.....	.....	.....	7.50	7.00	7.50	.....	6.25	.....	4.75	.....	400
Big Pittsburg, S. L	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bowman Silver	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bull-Domingo, S.L	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Castle Creek	.10	.09	.....	.....	.14	.10	.15	12	.17	13	.16	.....	12,400
Central Ariz'na, S	.10	.08	.09	.....	.09	.....	.10	.09	.11	.....	.12	.11	6,600
Cons. Imperial	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.55	.....	100
Con. Pacific	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cusi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Decatur	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Durango, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Eastern Oregon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Goodshaw, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harlem M. & M. Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harshaw	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kossuth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lacrosse, G	.....	.....	.....	.....	.10	.....	.10	.....	.09	.....	.09	.....	3,300
Mariposa Pref., G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" Com., G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mexican, G. S	3.50	2.85	.....	.....	2.45	2.25	2.75	2.50	3.00	2.85	2.90	.....	2,550
Mono	.....	.....	2 45	.....	.....	.....	6.00	.....	5.00	.....	4 05	.....	1,450
New Pittsburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Standard, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. Horn-Silv'r, S L	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ori'nt'l & Miller, S	.15	.....	.16	.15	.....	.....	.....	.14	.....	.14	.....	.13	4,700
Plutus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potosi	1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Rappahannock, G	.11	.....	.12	.....	.13	.11	.12	.....	.....	.....	.....	.....	11,600
Red Elephant, S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ridge	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver Cliff, S	.....	.....	.....	.....	.....	.....	.....	.06	.....	.11	.08	.09	2,300
Sonora Con	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Bodie, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Bulwer, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Hite	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Pacific	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
State Line, 1 & 4, S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" Nos. 2 & 3, S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sutro Tunnel	.19	.17	.19	.18	.21	.18	.22	.19	.23	.21	.21	.20	96,900
Taylor Plumas	.12	.11	.14	.11	.....	.....	.15	.14	.15	.....	.17	.14	16,400
Tioga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unadilla, S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union Cons., G. S	2.25	2.00	2.25	2.10	2.90	2.50	3.25	.....	3.25	3.20	2.50	.....	1,425
Utah	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

BOSTON MINING STOCK QUOTATIONS.

Amie	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allouez	2.75	.....	2.75	.....	2.75	2.62	2.75	.....	2.75	2.62	2.75	2 00	2,900
Atlantic	13.50	.....	.....	.....	15.00	13.75	.....	.....	.....	.....	.....	.....	372
Belle Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bodie	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bonanza D	1.25	1.20	1.27	1 25	1.35	1.25	1.27	1.25	1.30	.....	1.25	.....	4,400
Boston & Montana	6.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Breece	.....	.....	.....	.....	.27	.....	.....	.....	.30	.....	.....	.....	500
Bulwer	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calumet & Hecla	221	220	.....	.....	224	219	223½	223	224	223½	225	224	523
Catalpa	.35	.31	.35	32½	.30	.....	.37½	.32½	.40	.37½	.40	.37½	4,845
Central	.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Con. Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dunkin	.37½	.....	.....	.....	.....	.....	.30	.26	.....	.....	.....	.....	1,050
Eureka	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin	16 12	15½	16.00	.....	16.50	16.00	18.00	16.62	17.50	17.25	17.50	16 87	4,415
Freeland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Prize	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Honorine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kearsage	.....	.....	.....	.....	8.00	.....	9 50	.....	10.00	.....	9.50	.....	400
Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osceola	25 00	.....	28.00	25.00	32.00	28.00	37.00	31.50	32.00	30.00	31.00	30.00	3,965
Quincy	.....	.....	59.00	.....	64.00	59.00	64½	63½	63 50	60.50	61.50	60.50	786
Robinson	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Security	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stormont	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500
Arnold	.....	.....	.....	.....	.....	.....	.....	.....	.85	.....	.90	.85	.90
Aztec	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.17½	.....	.....
Blue Ridge	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bijou Consolidated	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bowman Silver	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cedar Spring	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Con. Pacific	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper Falls	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crescent	.12½	.....	.....	.....	.12½	.....	.....	.....	.....	.....	.....	.13	.12
"Cusi"	.30	.....	.....	.....	.30	.....	.....	.....	.....	.35	.....	.37½	.....
Empire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hanover	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Humboldt	.....	.....	.....	.....	.30	.....	.35	.....	.....	.....	.....	.30	.....
Huron	2.62	.....	.....	.....	2.62	.....	3.25	2.62	3.50	3.25	3.37	3 25	3.00
Mascot	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mesnard	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minnesota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Napa	.....	.....	.....	.....	.75	.....	.....	.....	.85	.....	.75	.....	.75
Oriental & Miller	.17	.....	.....	.....	.18	.....	.18	.....	.17	.....	.17	.....	.17
Pewabic	.....	.....	.....	.....	.....	.....	.....	.....	3 25	3.00	.....	.....	.....
Ridge	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Side	.....	.....	.....	.....	.25	.....	.25	.....	.35	.24	.....	.....	.35
Star	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sutro Tunnel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tamarack	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Winthrop	12⅛	.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.15	.....
												.20	.....
													2,250
													300
													.....
													.....
													.....
													.....
													1,500
													900
													.....
													.....
													350
													3,400
													.....
													.....
													1,300
													3,800
													150
													2,000
													.....
													.....
													300
													225

New York: Dividend shares sold, 84,874. Non-dividend shares sold, 161,125 Total, 245,999.
Boston: Dividend shares sold, 24,708. Non-dividend shares sold, 16,475. Total, 41,183.

COAL STOCKS.

Name of Company.	Par value of shares.	Nov. 13.		Nov. 15.		Nov. 16.		Nov. 17.		Nov. 18.		Nov. 19.		Sales.
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Barclay Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cameron Coal	50	26	24½	26¼	25½	27	25⅞	27⅝	26½	26¼	26	27⅜	25⅛	23,205
Col., C. & I	10	37	36½	36⅝	36	36½	36	36⅛	36	36⅛	35⅝	36⅝	36	12,777
Ches. & O. RR	100	.....	.....	10	.....	10½	10	.....	.....	10	.....	10½	.....	750
Consol. Coal	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28	.....	100
Cumb. C. & I	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Del. & H. C	100	106⅞	106¼	106⅛	106	106⅞	106¼	106⅞	106⅛	106¾	106¼	107	106⅝	4,695
D., L. & W. RR	50	141⅛	140	140¾	139¾	141⅛	140¼	141⅛	140¾	141½	140¾	142	141¼	117,060
Elk Lick Coal Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lehigh C. & N.†	50	53	52½	52¾	52⅝	52¾	.....	.....	.....	.....	.....	.....	.....	3,202
Lehigh Valley RR.†	50	56⅝	56½	56⅝	.....	56⅝	56½	.....	.....	.....	.....	.....	.....	402
L. & W. C. & I. Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland Coal	100	19	18	17⅞	.....	.....	.....	18¾	17½	.....	.....	.....	.....	990
Montauk Coal	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morris & Essex	50	.....	.....	142	.....	142	.....	142½	.....	.....	.....	142	.....	543
New Central Coal	100	17¾	17½	17⅞	17½	17⅝	17½	18¾	17⅞	20⅛	18¾	20¼	19¼	14,970
N. J. C. RR	100	53⅛	52¼	53	52⅛	54	52⅝	54¼	52⅞	53⅝	52⅞	53⅞	52⅞	45,299
N. Y. & S. Coal	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. Coal	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. RR.†	50	57⅝	57⅛	57⅝	57⅛	57⅝	57½	.....	.....	.....	.....	.....	.....	2,249
Ph. & R. RR.*	50	37	36⅝	37⅝	36⅞	39¼	37⅛	40¾	39⅛	39⅞	39	40½	39¼	518,946
Spring Mountain	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee C. & I. Co	.....	90½	89⅝	93¾	92½	96½	94	96	93	96¼	95	96½	95⅛	8,058
Westmoreland Coal†	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Of the sales of this stock, 23,771 were in Philadelphia, and 495,175 in New York.
† The quotations for these stocks are not percentage, but actual price. Total sales, 753,246.

We do not look for much reaction, but believe all the good mines are a purchase for much higher prices this winter. Calumet & Hecla advanced on large sales for this stock from $221@$225, and closed at the latter price. Quincy opened at $59, sold up to $64½, and declined to $60½, with the stock in demand at this price. Franklin has been largely dealt in, and advanced from $16@$17½, with later sales at $17. Osceola scored the largest advance of any stock on the list, on report that the Calumet vein had been found on its territory. The opening price was $25, advancing rapidly on moderate sales to $37, at which it culminated, and the reaction set in, carrying it back to $30½, at which it sold to-day, show-

San Francisco Mining Stock Quotations.

Name of Company.	Closing Quotations. Nov. 12.	Nov. 13.	Nov. 15.	Nov. 16.	Nov. 17.	Nov. 18.
Albion	.....	.....	.....	.....	.....	.....
Alpha	.....	.....	.....	.....	.....	.....
Alta	1.37½	1.62½	2.00	2.50	2.25	1.62½
Argenta	.....	.....	.....	.....	.....	.....
Bechtel	.....	.....	.....	.....	.....	.....
Belcher	.....	.....	.....	.....	.....	.....
Belle Isle	.....	.....	.....	.....	.....	.....
Best & Belcher	5.00	5.12½	5.25	5.37½	5.25	5.37½
Bodie	2.37½	2.37½	2.50	2.87½	4.00	3.00
Bullion	.....	.....	.....	.....	.....	.....
Bulwer	1.50	1.50	1.50	2.50	1.87½	2.00
Challar	2.25	3.00	3.50	4.87½	5.75	5.37½
Con. Pacific	.....	.....	.....	.....	.....	.....
Con. Cal. & Va	15.25	16.00	19.00	19.00	17⅞	18.00
Crown Point	2.00	2.25	2.50	3.12½	2.75	2.62½
Day	.....	.....	.....	.....	.....	.....
Elko Cons	.....	.....	.....	.....	.....	.....
Eureka Cons	.....	.....	.....	.....	.....	4.25
Exchequer	.....	.....	.....	.....	.....	.....
Gould & Curry	2.50	2.75	3.25	4.00	3.87½	3.75
Grand Prize	.....	.....	.....	.....	.....	.....
Hale & Norcross	2.62½	2.87½	3.37½	3.25	3.50	2.87½
Independence	.....	.....	.....	.....	.....	.....
Martin White	.....	.....	.....	.....	.....	.....
Mexican	3.12½	3 50	4.25	4.87½	4.87½	4.62½
Mono	2.37½	2.37½	2.25	2.37½	2.75	3.00
Mount Diablo	.....	.....	2.50	.....	2.50	2.50
Navajo	.85	.85	.80	.90	.80	.90
Northern Belle	.....	.....	.....	.....	.....	.....
North Belle Isle	.....	.....	.....	.....	.....	.....
Ophir	7.75	8.50	8.25	8.75	8.75	8.12½
Overman	.....	.....	.....	.....	.....	.....
Potosi	1.25	1.37½	2.00	3.50	3.25	3.62½
Savage	4.12½	5.75	6.62½	8.25	7.37½	8.12½
Scorpion	.....	.....	.....	.....	.....	.....
Sierra Nevada	2.75	3.00	3.25	4.00	4.00	3.12½
Silver King	.....	.....	.....	.....	.....	.....
Tip-Top	.....	.....	.....	.....	.....	.....
Union Cons	1.87½	2.25	2.50	3.25	3.00	2.37½
Utah	2.00	2.50	3.50	4.00	4.00	3.25
Wales Cons	.....	.....	.....	.....	.....	.....
Yellow Jacket	2.87½	3.00	2.87½	3.50	4.25	3.50

ing a net gain for the week of $5\frac{1}{2}$ a share. Huron and Allouez started on the race at $2\frac{5}{8}$; but the former gained rapidly over the latter, and reached $3\frac{1}{8}$, at which over 1000 shares were sold; while the latter only gained $\frac{1}{8}$, selling at $2\frac{3}{4}$, and closing at the opening price. Huron reacted to $3, which was the bidding price at the close. Arnold and South Side both have been in good demand as speculative stocks, the former selling at 90c., and the latter at 35c.; both of these stocks are booked for much higher prices, and are undoubtedly a good purchase at present prices. Atlantic is one of the good stocks that is not largely dealt in, but orders to purchase it carried the price up from $13\frac{1}{2}$@$15. Kearsarge was listed and dealt in this week, selling at $8, and advancing to $10, with later sales at 9\frac{1}{4}$. The sales for the week comprise 518 Calumet & Hecla, 662 Quincy, 4165 Franklin, 3522 Osceola, 400 Kearsarge, 372 Atlantic, 50 Pewabic, 2900 Huron, 2200 Allouez, 1750 Arnold, and 1100 South Side; total, 17,650 shares.

In silver stocks, there was considerable activity, with Bonanza and Catalpa as leaders, the former selling at $1.25@$1.35, reacting to the former figure; sales, 4350 shares. Catalpa opened at 35c., and sold up to 40c., with sales of 3000 shares. Boston & Montana advanced from $4\frac{1}{2}$@$6; and Napa Quicksilver declined to 75c.

At the Mining Exchange, a fair amount of business is daily transacted, both in copper and silver stocks, the former attracting the most attention, although Dunkin, Catalpa, Crescent, and other silver stocks have had a good share of attention. Prices do not vary much from the prices quoted above, and parties buying or selling at this Board have the advantage of lower commissions.

St. Louis Mining Stocks. Nov. 17.

[From our Special Correspondent.]

The activity noted in our last report has continued this week, without, however, resulting in any material advance in any stock, with the exception of Granite Mountain. The latter has been in active demand, with more buyers than sellers, and has consequently sold up from $45 (our last quotation) to $48. Transactions in this stock have been quite heavy. All other stocks remain at about the same figures, notwithstanding that trading in them has been on a large scale.

Name of Company.	Location.	Bid.	Asked.
Adams, s. l	Colo	$6 50	$7.00
Bi-Metallic s	Mont	7.00	.....
Cen. Continental, g. s.	Ark	.....	1.00
Consolidated Silver, s.	Mo	.....	.....
Courtland	Colo	.....	.50
Dandy, s	Colo	.....	1.00
Durango, t	Mex	.....	.....
Grand Duke	Colo	.....	.....
Granite Mountain, s	Mont	47.50	48.00
Hope, s	Mont	43 00	45.00
Ideal, s, l	Colo	1.30	1 50
Iron Gold and Silver	.....	.....	.50
Laclede	.....	.50	.75
Mexican Improvement	Mex	1.55	1.65
Peacock	N. M	3.00	3.30
Puritan	.....	.....	1.00
Quincy	Colo	.15	.25
Sheridan	N. M	7.25	7.75
Small Hopes Cons., s. l	Colo	8.50	9.00
St. Louis & San Fran	Mex	.....	.....
St. Louis & Sonora, g. s.	Mex	.....	.25
St. Louis & St. Elmo	Colo	.35	.45
St. Louis & Yavapai	Ariz	1.20	1.30
West Granite, s	Mont	.....	1.60

FREIGHTS.

The latest actual charters to November 19th, per ton of 2240 pounds:

To	From Philadelphia	From Baltimore.	From New York shipping ports.
Alexandria	.60§	.....	.....
Annapolis	.65	.....	.....
Baltimore	.58§	.....	.....
Bangor	1.05*	1.15	.85*
Bath, Me	1.05*	1.15	.85*
Beverly	1.05*	.....	.85*
Boston, Mass	1.05*	1.15	.85*
Bridgeport, Conn.	.....	1.00	.65
Bristol	.....	1.15	.80*
Brooklyn	.....	1.00	.25§
Cambridge, Mass.	1.05*	.....	.85 3*
Cambridgeport	1.05*	.....	.85 3*
Charleston, S. C.	.85@.90	.80	.....
Charlestown	1.10*	.....	.85 3*
Chelsea	1.05*	.....	.85 3*
Com. Pt., Mass.	1.05*	.....	.85*
E. Boston	1.05*	.....	.85*
East Cambridge	1.05*	.....	.85 3*
E. Gr'nwich, R. I.	.....	.....	.80
Fall River	.90*	1.00	80
Galveston	2.25	2.50	.....
Gardner	1.05*¶	1 15	.....
Georgetown, D.C.	.60	.....	.....
Gloucester	1.05*	.....	.....
Hoboken	.....	.95	.....
Jersey City	.....	.95	.....
Lynn	1.10@1.15*	.....	1.35
Marblehead	1.05*	.....	.....
Milton	1.15*	1.30	.....
Newark	.....	1.15	.....
New Bedford	.90*	1.00	.85
New-Berne	.75	.....	.....
Newburyport	1.20*	1.30	1.00*
New Haven	.....	1.00	.65
New London	.....	1.00	.75
New Orleans	2.00	.....	.....
New York	.....	1.00	.25§
Newark, N. J	.....	1.15¶	.....
Newport	.90*	.....	.80
Norfolk, Conn	.....	.....	.65
Norfolk, Va	.55	.....	.....
Norwich	.....	1.15*¶	.80
Pawtucket	.....	.....	.75¶
Portland, Me	1.05*	1.15	.85*
Portsmouth, N.H.	1.15*	1.25	.95*
Portsmouth, Va.	.55	.....	.....
Providence, R. I.	.90*	1.00	.80
Quincyport	1.05*	.....	1.10
Richmond, Va	.60	.....	.....
Rockport	1.10*	.....	.....
Roxbury, Mass.	1.05*	.....	.....
Saco	1.10†	1.60§	.....
Salem, Mass.	1.05@1 10*	1.15	85*
Savannah	.90	1.05	.....
Somerset	.90*	1.15	.75
Washington	.60	.....	.....
Williamsb'g, N.Y.	.....	1.00	.....
Wilmington, Del	.....	1.00	.....
Wilmington, N.C.	.85@.90	1.00	.....

* And discharging. † And discharging and towing. 3c. per bridge extra. § Alongside. ‖ And towing up and down. ¶ And towing. †† Pilotage. ** Below bridge. *** Old B. L.

Important Opportunity.

FOR SALE.—State rights to use the Bietrix Briquette Machinery. By this process, coal-dust, now largely worthless, is so prepared that, by mixing with it about 5 per cent of coal-tar, a fuel superior to lump coal is produced and made into bricks weighing about 2 lbs., 6 lbs., 11 lbs., or 22 lbs. each. These bricks or briquettes are used for domestic purposes, locomotives, steamers, blast-furnaces, etc., with great success.

The actual cost in many cases ought not to exceed the following for an output of 100 tons in 20 hours:

Office expenses per ton Briquettes	.04
Depreciation and interest	.05
Repairs, oil, etc	.03
Labor	.10
Coal-dust	.10
Tar	.30
Total cost per ton	.62

Where the dust is not made into briquettes at the coal mine, cost of freight on it must be added.

Capacity of plants vary from 100 to 300 tons in 20 hours.

Nearly 80 of these machines are in use in Europe, and the names of all the buyers will be given.

The total capacity of the Bietrix system has grown from nothing in 1878 to nearly 3,500,000 tons yearly in 1886. Some firms have a number of these plants, and make 200,000 tons and upward yearly. In many cases, parties buy the coal-dust and make the briquettes for general sale; in other cases, the plants have been taken by coal-mine owners themselves, or by railroads, etc. The briquettes are superior to lump coal, and do not deteriorate so much when exposed to the weather. A large field and handsome profits in this business await enterprising parties in this country. Address agency,

V. Bietrix & Co.,

Room 22, 8th Floor, Mills Building, New York City.

P. S.—Parties also wanted to manufacture the above. Each plant, with motive power, weighs from about 50 to 120 tons, according to size. A Special Opportunity will be given the first parties who purchase a plant for use in the United States.

VALUABLE COAL PROPERTY, RICH iron ore lands, large bodies of yellow pine and hard wood, splendid business lots in City of Birmingham, for sale by

HILLEARY & KEITH,
Birmingham, Ala.

A BLAST-FURNACE SUPERINTENDENT open to engagement after January 1st; experienced with Southern coke furnaces. Best references.
Address
SUPERINTENDENT,
Care Engineering and Mining Journal.

CONTRACTS OPEN.

64 OIL WELL DRILLERS—PROPOSALS will be received by "Editor," care of Engineering and Mining Journal, New York City, for boring for oil in France. Maximum depth 600 meters, through calcareous and bituminous shales. State price per meter, contractor finding all plant except engines.

100 STEEL GUN-FORGINGS AND ARMOR—Proposals will be received by the Secretary of the Navy, Navy Department, Washington, D. C., until March 15th, 1887, for about 1310 tons of steel gun-forgings, and about 4500 tons of steel armor plates.

101 MACHINERY FOR CRUISERS AND gunboats—Proposals will be received by the Secretary of the Navy, Navy Department, Washington, D. C., until November 24th, for the construction and erection on board the vessels of engines, boilers, and appurtenances, complete in all respects.

CONTRACTS OPEN.

116 WATER-WORKS—SEALED PROPOSALS for the construction of works for the water supply of the city of Portland, Oregon, will be received at the office of the Water Committee, Portland, Oregon, until 12 M., December 15th, 1886. These works will be constructed according to the printed specifications dated August 24th, 1886, and will include thirty one miles of wrought-iron pipe, 27 and 22¼ inches in diameter; three iron bridges; two thousand feet of submerged pipe under and across the Willamette River; a reservoir within the city limits, and all other works described in the specifications, excepting those specified as "Head-works," which are now under contract. The specifications provide that the wrought-iron pipes shall be made of iron sixty inches in width, but proposals will also be received for furnishing the iron, and for manufacturing the entire length of pipe, of iron either forty-two, forty-eight, or sixty inches in width. Proposals will also be received for the construction of all the works described in the specifications, excepting the Head-works, for a lump sum, the contractor being at liberty to use iron for the pipes either forty-two, forty-eight, or sixty inches in width, the whole work to be completed within eighteen months after signing the contract. In these modified forms of proposals the width of iron proposed will be stated in the bids, and a copy of this advertisement will be attached to each bid. The proposals will be indorsed on the outside of the sealed envelope, "Proposals for Construction of Water-Works," and addressed to Philip C. Schuyler, Clerk of the Water Committee, Portland, Oregon. The specifications and such further information as may be required will be furnished on application by ISAAC W. SMITH, Engineer of the Water Committee, Portland, Oregon.

125 DREDGING—PROPOSALS WILL BE received at the U. S. Engineer Office, Wilmington, N. C., until November 25th for dredging in Bogue Sound, N. C., New River, N. C., Harlowe Creek, N. C.

126 STEAM-HEATING APPARATUS.—Proposals will be received by M. E. Bell, Supervising Architect, Treasury Department, Washington, D. C., until November 22d, for supplying and putting in place, complete, in the public buildings at Columbus, O.; Jefferson City, Mo.; Pensacola, Fla.; Shreveport, La.; Syracuse, N. Y.; Council Bluffs, Iowa, and Quincy, Ill., low pressure return circulation, indirect steam heating and ventilating apparatus.

127 STEAM-HEATING AND VENTILATing Apparatus.—Proposals will be received by M. E. Bell, Supervising Architect, Washington, D. C., until November 30th, for supplying and putting in place complete low-pressure steam heating and ventilating apparatus, tanks, etc., for the Post-Office, Court-House, etc., building at Baltimore, Md.

128 IRON STAIRS—PROPOSALS WILL BE received by M. E. Bell, Supervising Architect, Washington, D. C., until November 23d, for furnishing and fixing in place complete the iron stairs, etc., required for the Court-House and Post-Office at Jefferson City, Mo., etc.

130 BRIDGES—PROPOSALS WILL BE received by the Roumanian government until December 7th, for the bridge over the Danube, which will be composed of two parts, one over the Danube proper, the other over the Borcea, a small arm of the river. The bridge over the Danube will have a length of 660 meters, divided into four arches of 165 meters. The bridge over the Borcea will be 495½ meters long, in three arches 165 meters each.

131 WATER-PIPE—PROPOSALS WILL BE received by the Water Board, Newton, Mass., for 600 tons of water-pipe, delivery next spring.

132 STATIONARY ENGINES AND BOILER—Proposals will be received by J. Robins, Lower Peach Tree, Ala., for 15, 20 and 25 horse-power stationary engines and boiler.

133 SUPPLIES—PROPOSALS WILL BE received by Capt. James F. Gregory, U. S. Light-House Engineer, Fifth and Sixth Districts, Baltimore, Md., until November 27th, for furnishing the mill-work, hardware, copper, tin, iron, and stone-work, oil, etc., for the construction of buildings at Mosquito Inlet Light Station, Florida.

134 DREDGING—PROPOSALS WILL BE received by the Department of Docks, Pier A, North River, New York, until December 1st, for dredging at sundry named places on the North and East Rivers.

135 BROWN STONE AND MARBLE—PROposals will be received by M. E. Bell, Supervising Architect, Treasury Department, Washington, D. C., until December 8th, for furnishing and setting all the brown stone and marble required for the Court-House, etc., at Rochester, N. Y.

136 DREDGING JETTIES, ETC.—PROposals will be received by Lieut-Col. William P. Craighill, U. S. Engineer Office, 905½ East Main Street, Richmond, Va., until [illegible] December 8th, for dredging and excavating rock from the channel of the James River, near Richmond, Va., for the construction of mattress-dikes, and for the construction and extension of jetties.

137 JETTIES—PROPOSALS WILL BE received by Lieut. W. M. Black, U. S. Engineer Office, Jacksonville, Fla., until December 11th, for the construction of jetties at the mouth of Saint John's River, Florida.

138 SUPPLIES—PROPOSALS WILL BE received by Lieut.-Col. O. M. Poe, U. S. Engineer Office, 34 West Congress Street, Detroit, Mich., until December 13th, for furnishing one dredge, one tug, and two dump scows; iron drift bolts and spikes; framing, placing, filling, and completing crib piers; and furnishing and placing puddling clay.